

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

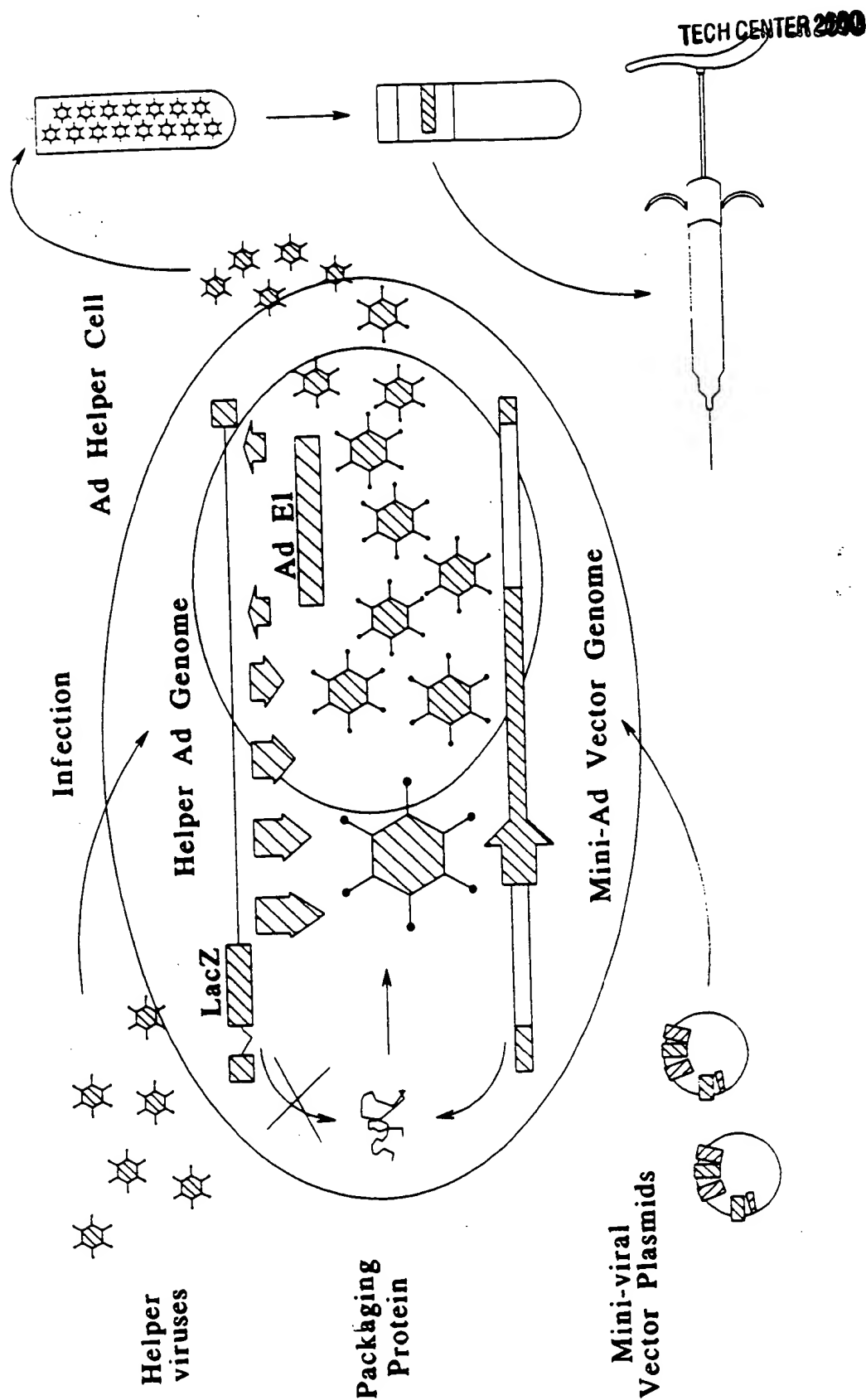
- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



FIGURE 1



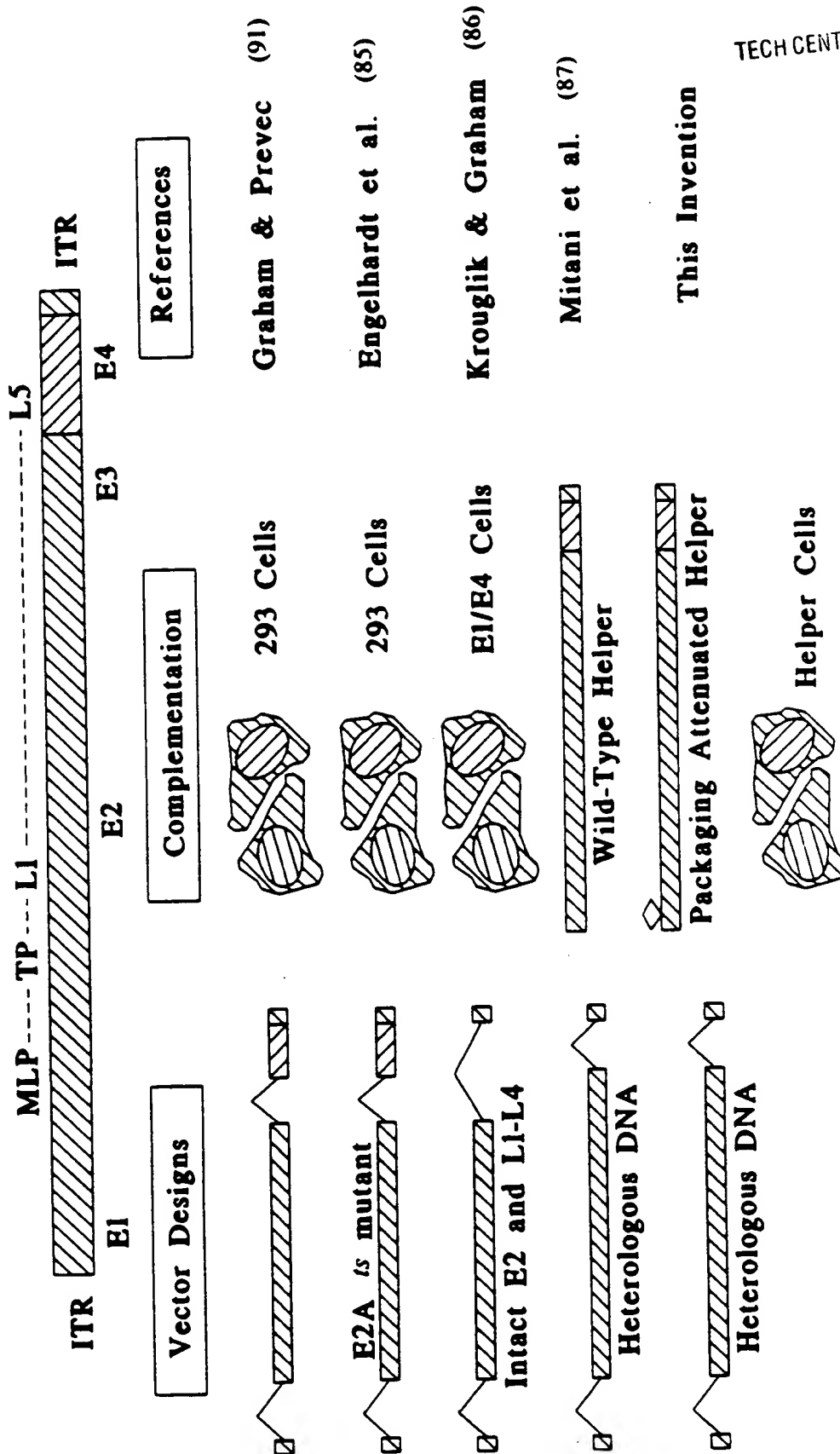


RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 2



JUN 15 2004
 U.S. PATENT & TRADEMARK OFFICE

Inventors: Zhang et al.
 Title: Mini-Ad Vector for Immunization
 Application No.: 09/837079

RECEIVED
 JUN 25 2004
 TECH CENTER 2800

FIGURE 3

FIG. 3A

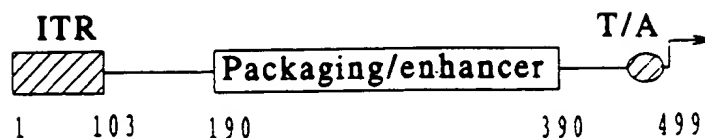


FIG. 3B

| | | | | |
|-----------------|-------------|--------------|-----------------|-------------|
| <u>E1A Core</u> | | <u>E2F</u> | <u>E1A Core</u> | |
| GTGTACACAG | GAAGTGACAA | TTTTCGCGCG | GTTTTAGGCG | GATGTTGTAG |
| CACATGTGTC | CTTCACTGTT | AAAAGCGCGC | CAAAATCCGC | CTACAACATC |
| 200 | 210 | 220 | 230 | 240 |
| <u>A I</u> | | <u>A II</u> | <u>E2F</u> | |
| TAAATTTGGG | CGTAACCGAG | TAAGATTTGG | CCATTTTCGC | GGGAAAAC TG |
| ATTTAAACCC | GCATTGGCTC | ATTCTAAACC | GGTAAAAGCG | CCCTTTTGAC |
| 250 | 260 | 270 | 280 | 290 |
| <u>E1A Core</u> | | <u>A III</u> | <u>A IV</u> | |
| AATAAGAGGA | AGTGAAATCT | GAATAATTTT | GTGTTACTCA | TAGCGCGTAA |
| TTATTCTCCT | TCACCTTTAGA | CTTATTAAAA | CACAATGAGT | ATCGCGCATT |
| 300 | 310 | 320 | 330 | 340 |
| <u>A V</u> | <u>A VI</u> | <u>A VII</u> | | |
| TATTTGTCTA | GGGCCGCGGG | GACTTTGACC | GTTTACGTGG | AGACTCGAAA |
| ATAAACAGAT | CCCGGCGCCC | CTGAAACTGG | CAAATGCACC | TCTGAGCGGG |
| 350 | 360 | 370 | 380 | 390 |

FIG. 3C

| | |
|--------------|-------------------------|
| A repeat I | 5'- <u>GTAATTTG</u> -3' |
| A repeat II | <u>GTAAGAATTTG</u> |
| A repeat III | <u>GTCAAATCTG</u> |
| A repeat IV | <u>ATAATTTTG</u> |
| A repeat V | <u>GTAATATTTG</u> |
| A repeat VI | <u>GGGACTTTG</u> |
| A repeat VII | <u>GACCGTTTA</u> |

CONSENSUS: 5'-GT-N₃₋₄ TTTG-3'



Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

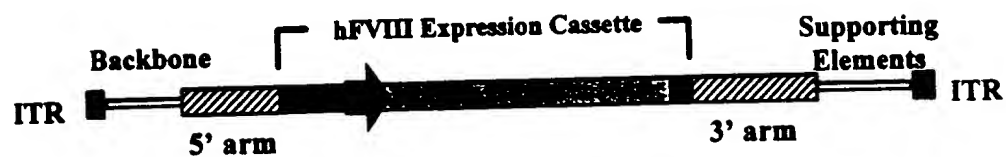
RECEIVED

JUN 25 2004

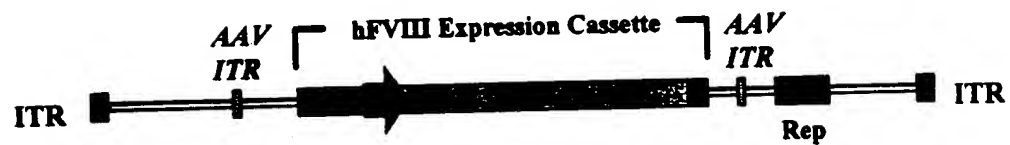
TECH CENTER 2800

FIGURE 3D

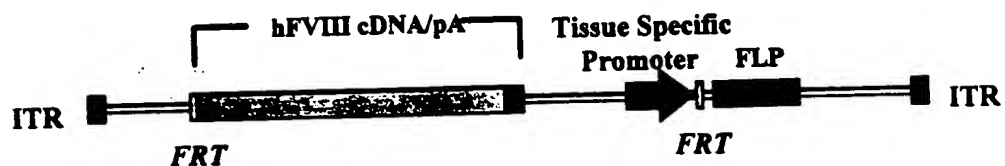
Product Design for MiniAdFVIII



Version 1: Genomic Sequence Device



Version 2: AAV/ITR Integration Device



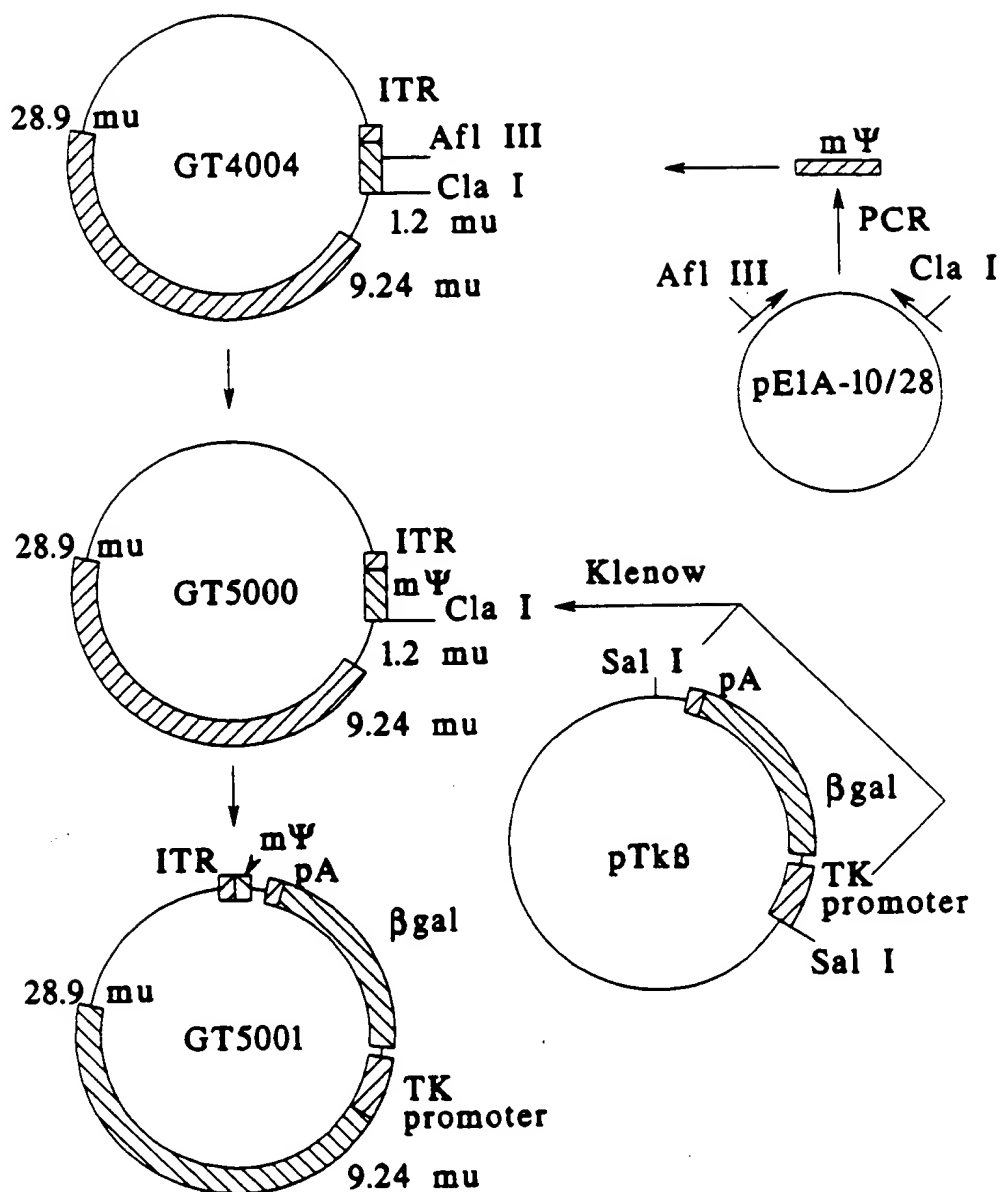
Version 3: Episomal Device



JUN 25 2004

TECH CENTER 2000

FIGURE 4





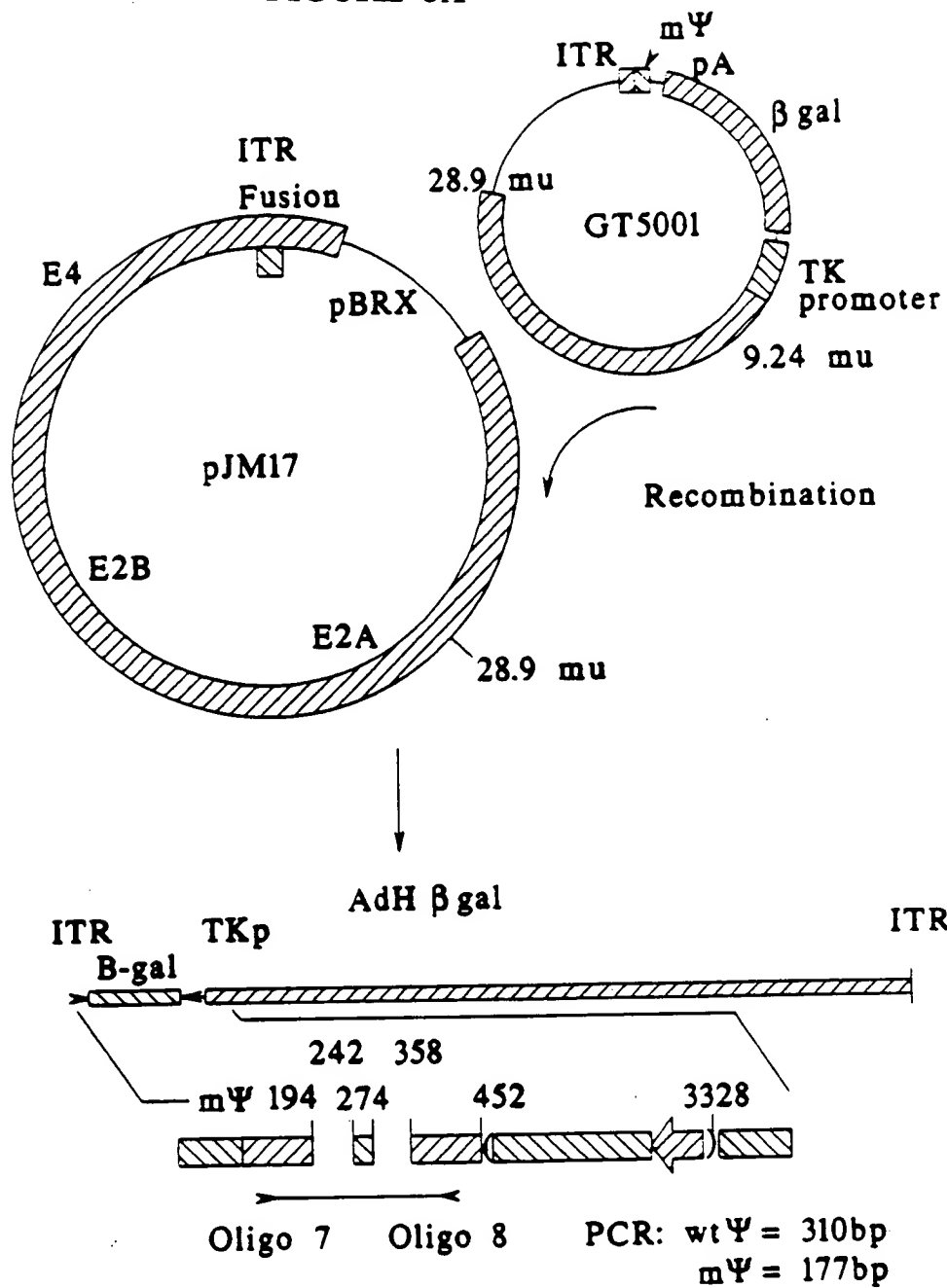
Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 5A





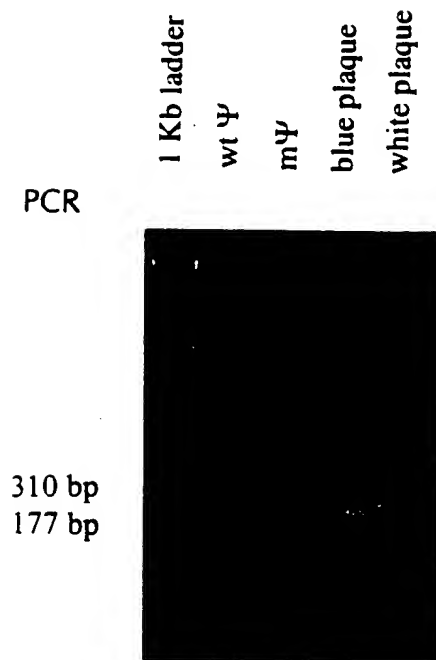
Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2000

FIGURE 5B





Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 6

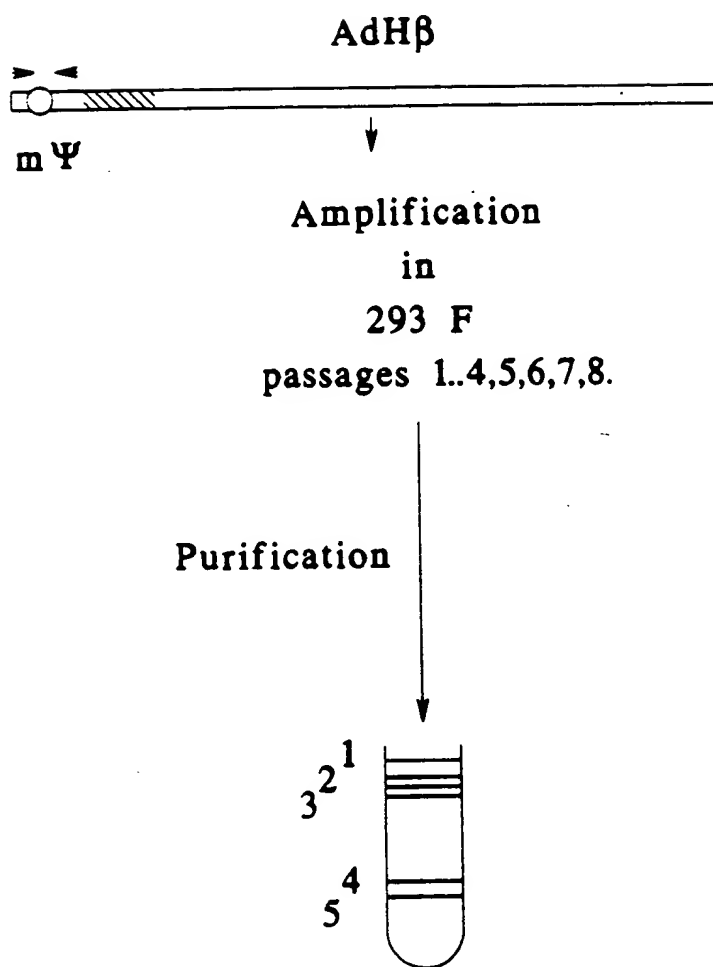
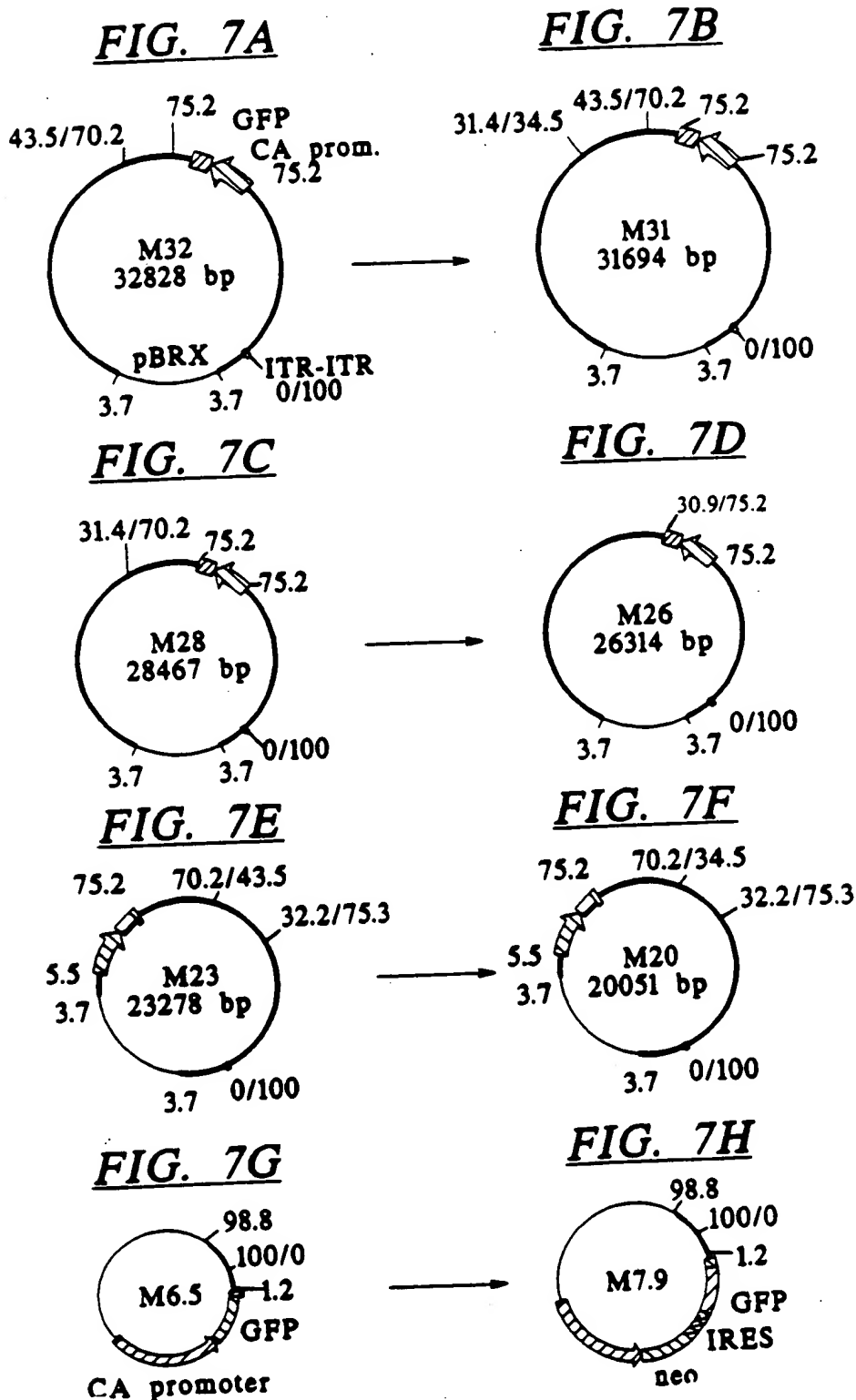




FIGURE 7

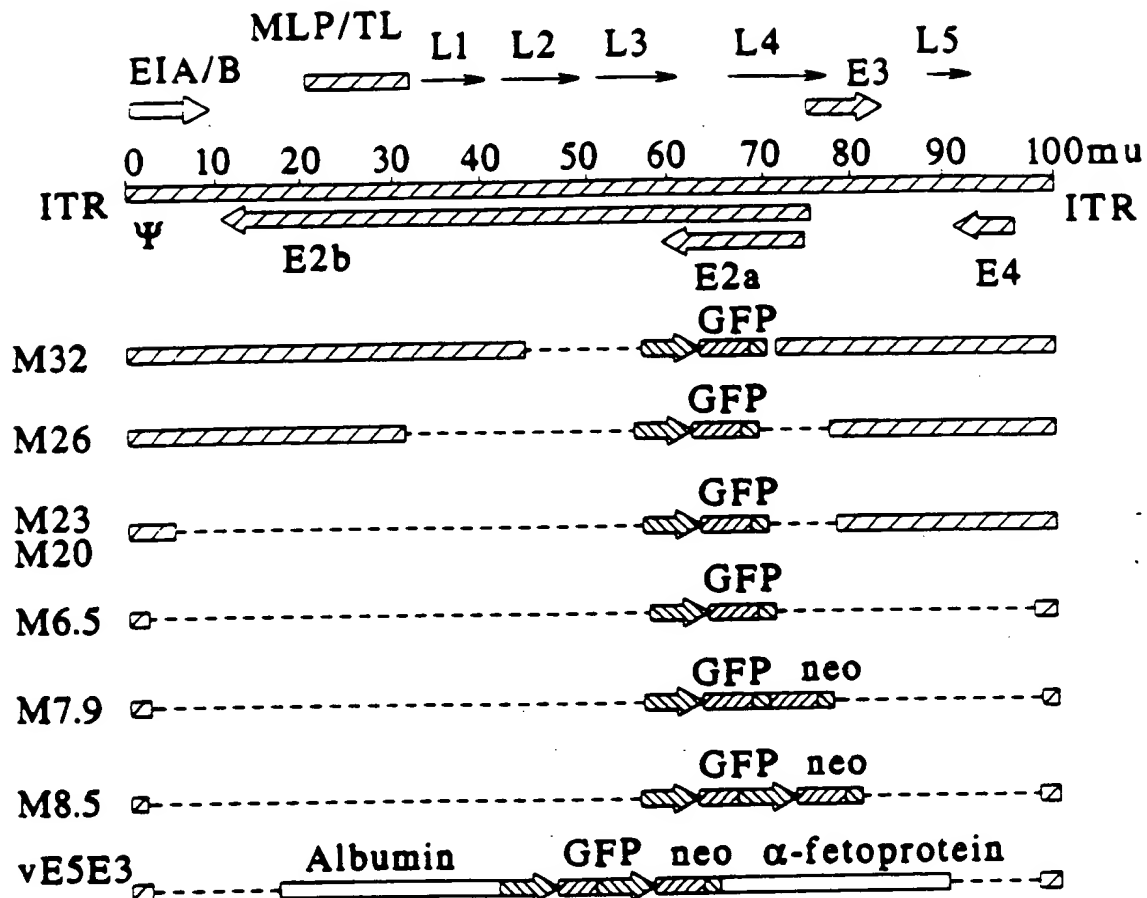




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2300

FIGURE 8

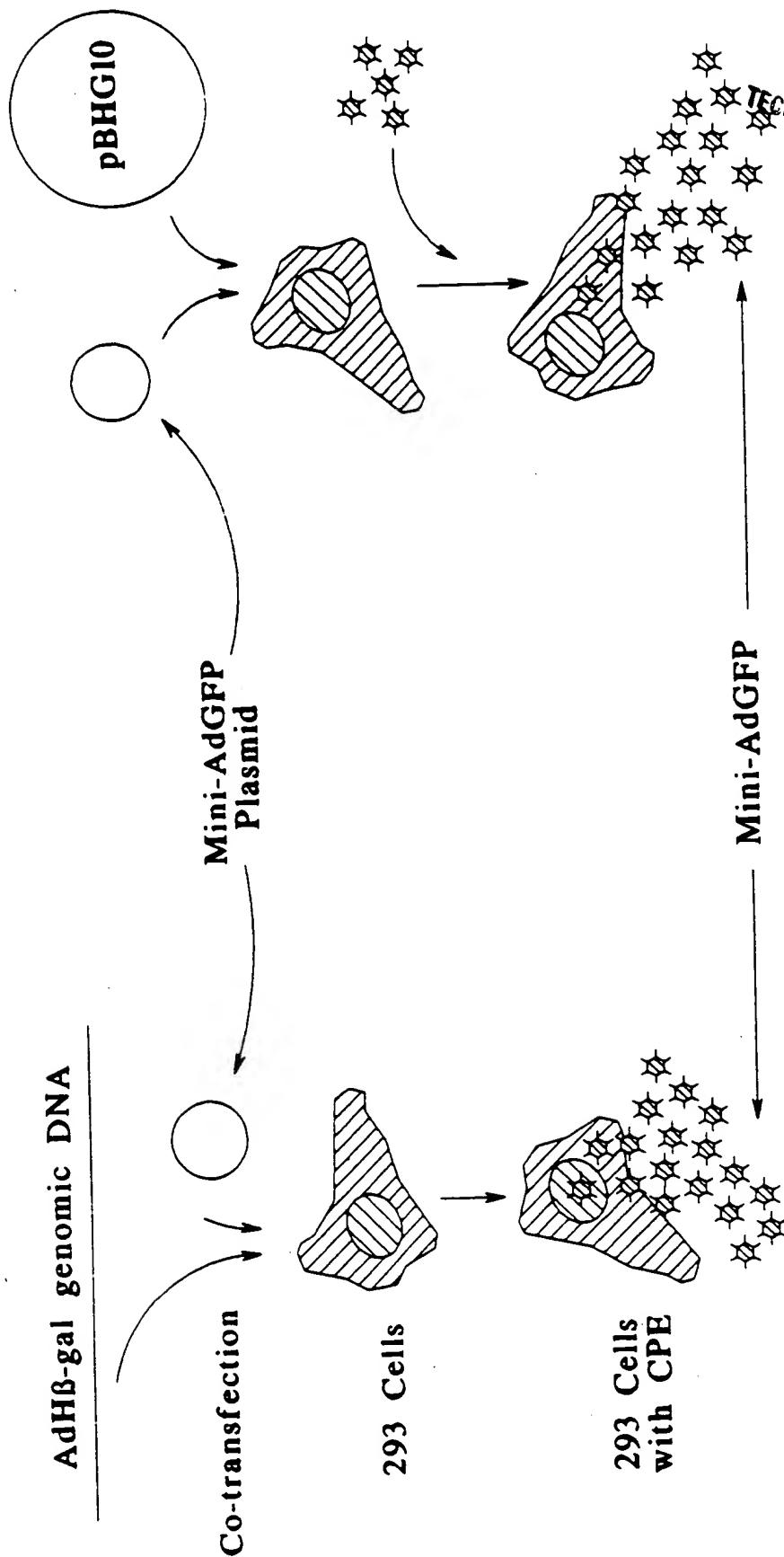




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2300D

FIGURE 9





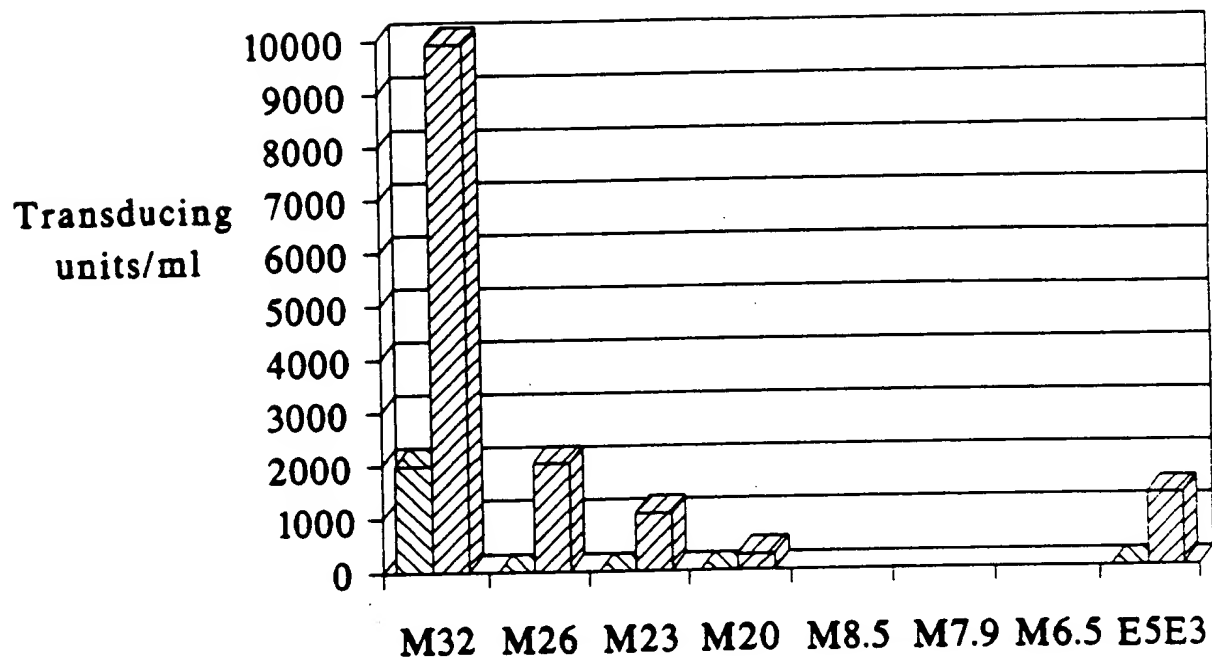
Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2000

FIGURE 10

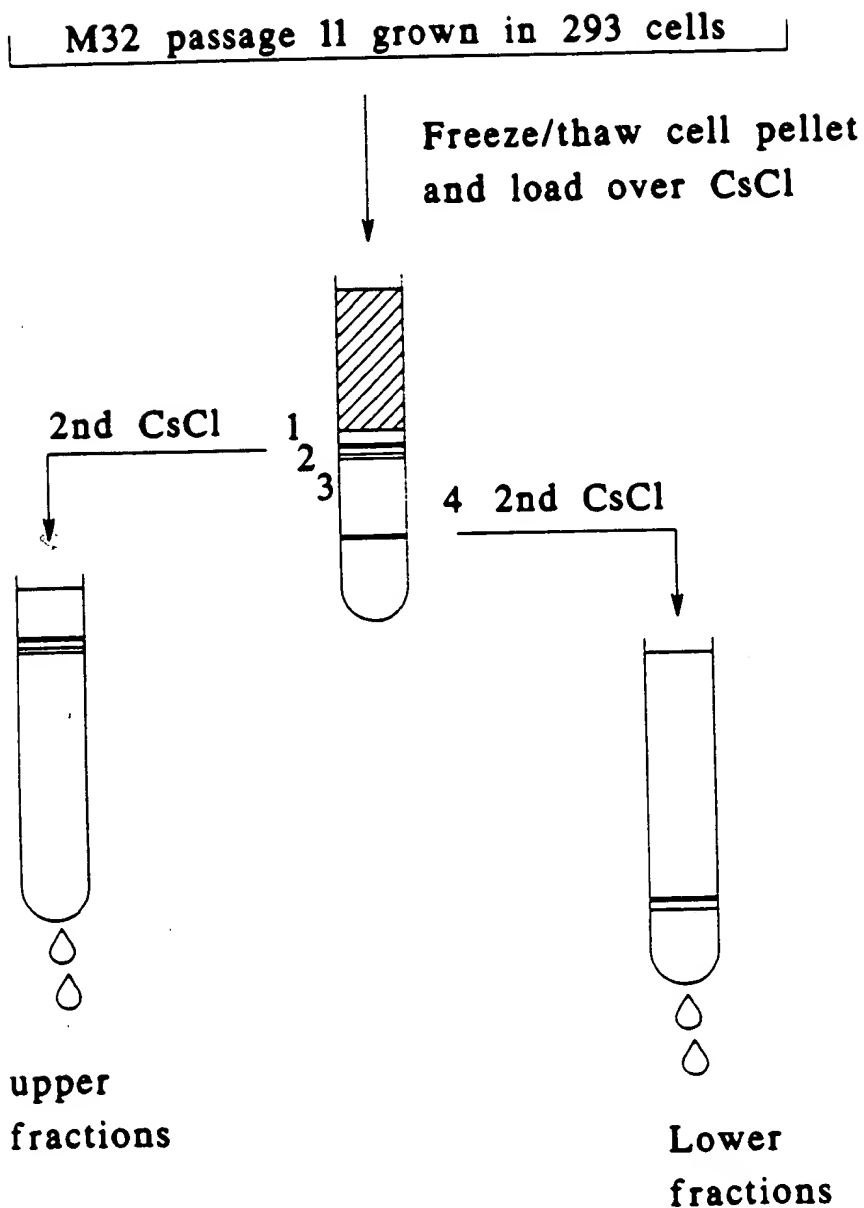




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 11





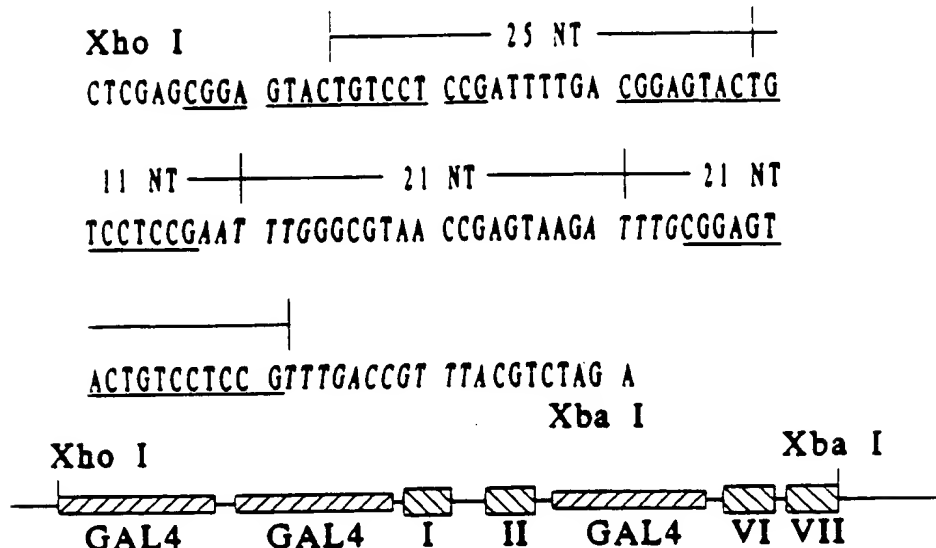
Inventors: Zhang et al.
 Title: Mini-Ad Vector for Immunization
 Application No.: 09/837079

RECEIVED
 JUN 25 2004
 TECH CENTER 2800

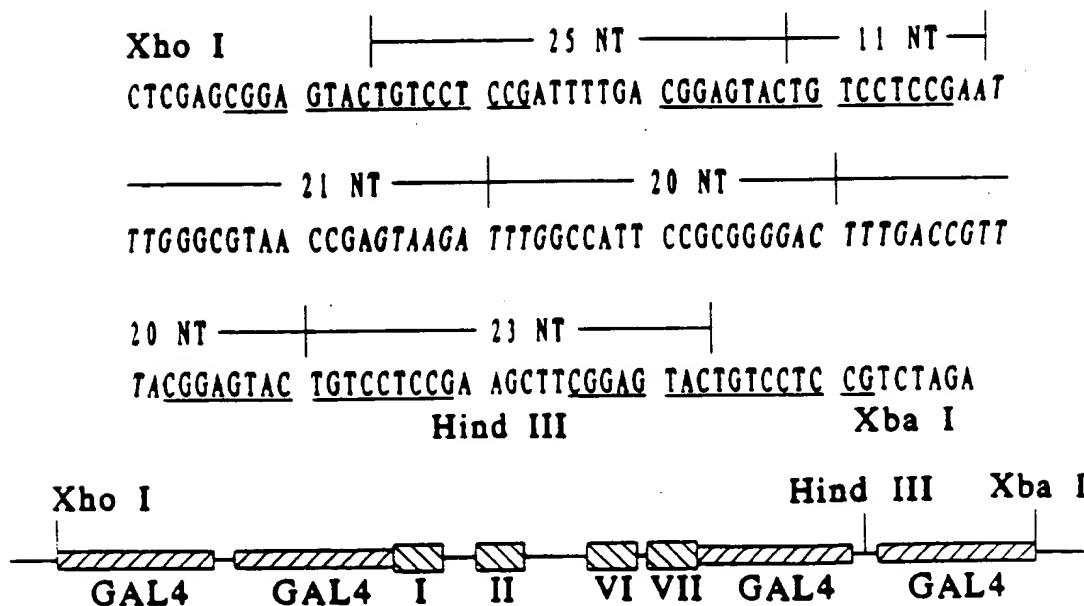
FIGURE 12

Ad5 Pac Modification with GAL4 Binding Sites

Design #1



Design #2





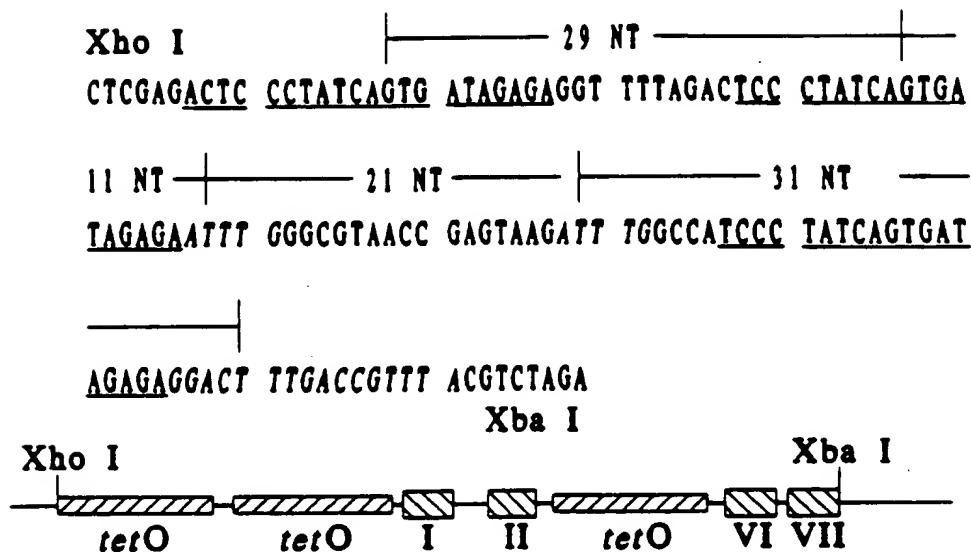
Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2300

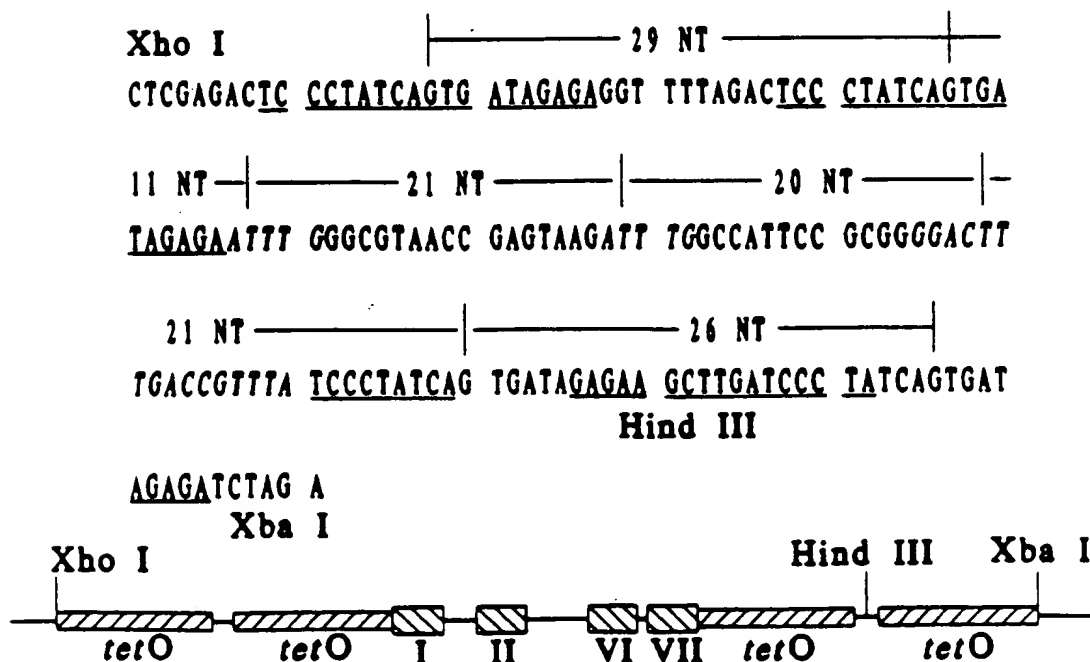
FIGURE 13

Ad5 Pac Modification with *tetO* Binding Sites

Design #1



Design #2





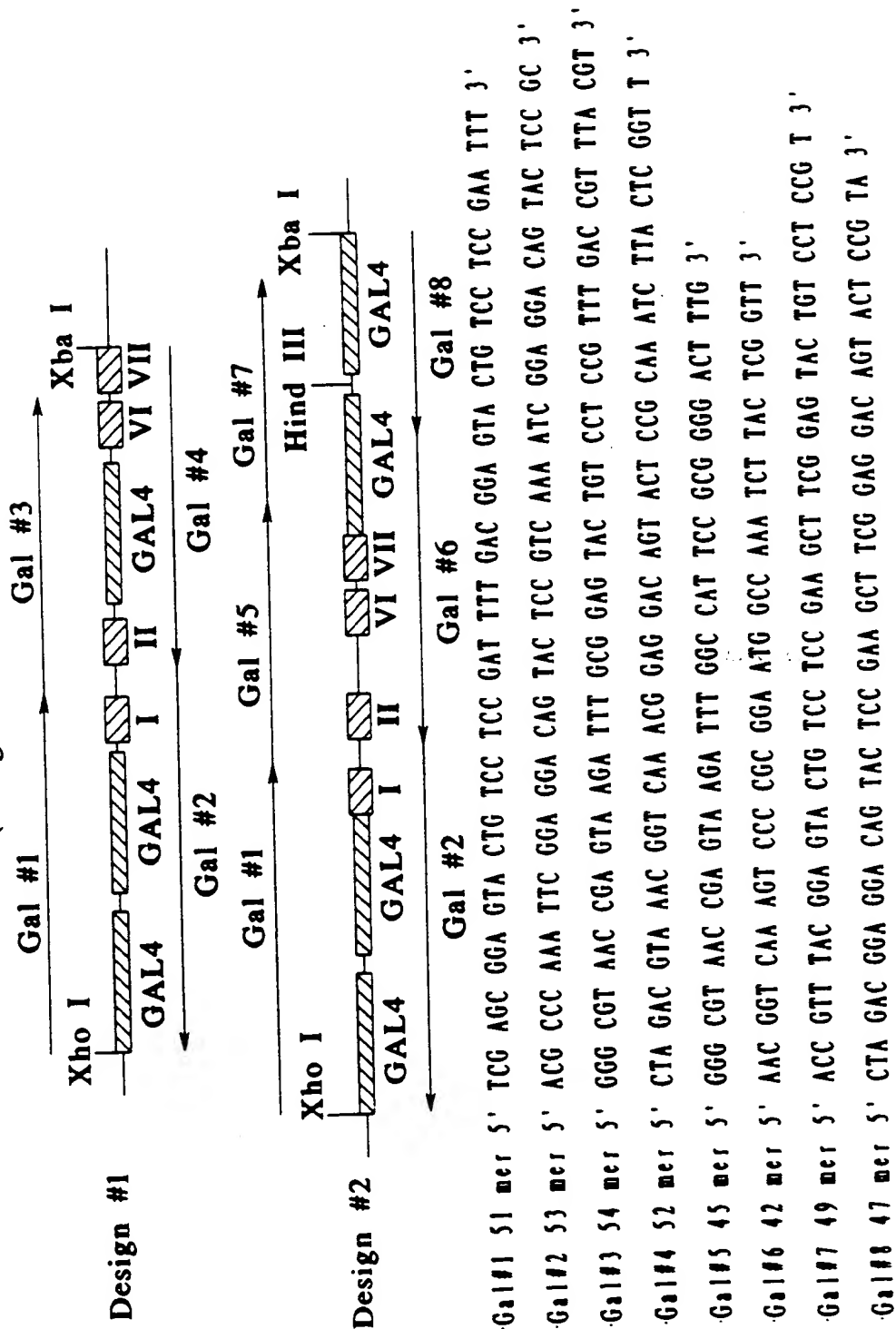
RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 14

Positions and Sequences of Synthetic Oligos for Ad Pac-GAL4 Modification
(Design #1 & #2)





Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

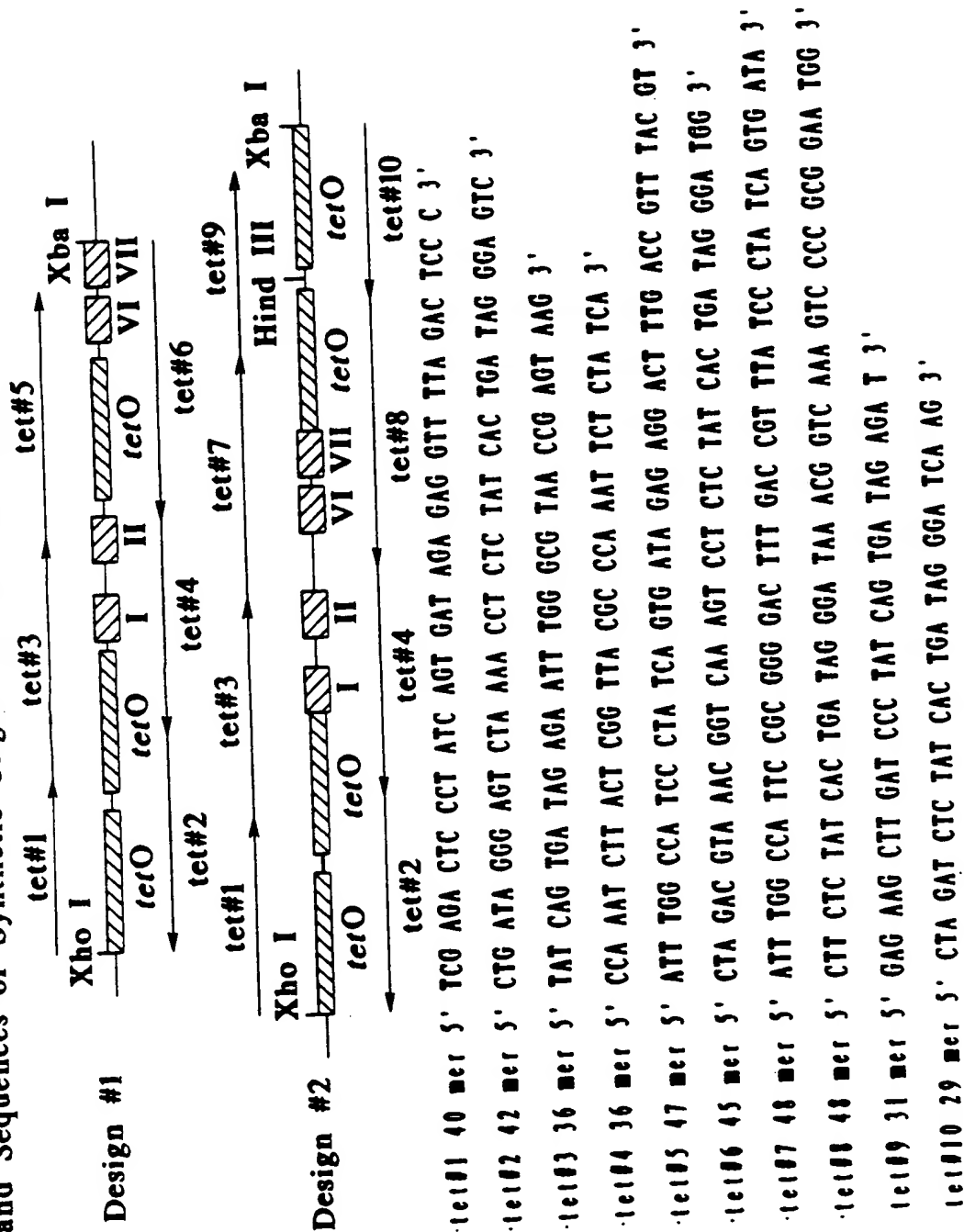
RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 15

Positions and Sequences of Synthetic Oligos for Ad Pac- *tetO* Modification (Design #1 & #2)

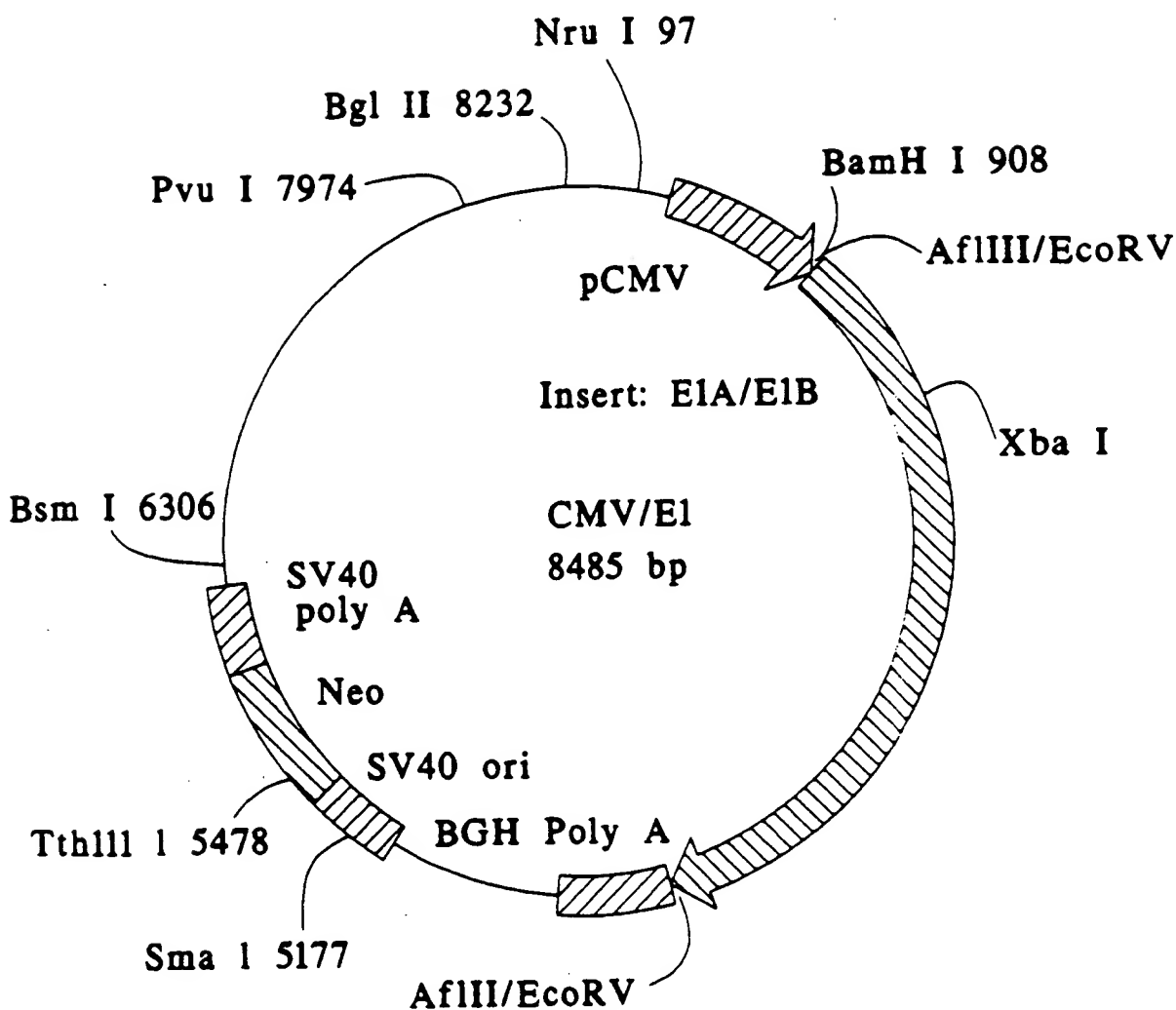




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 16





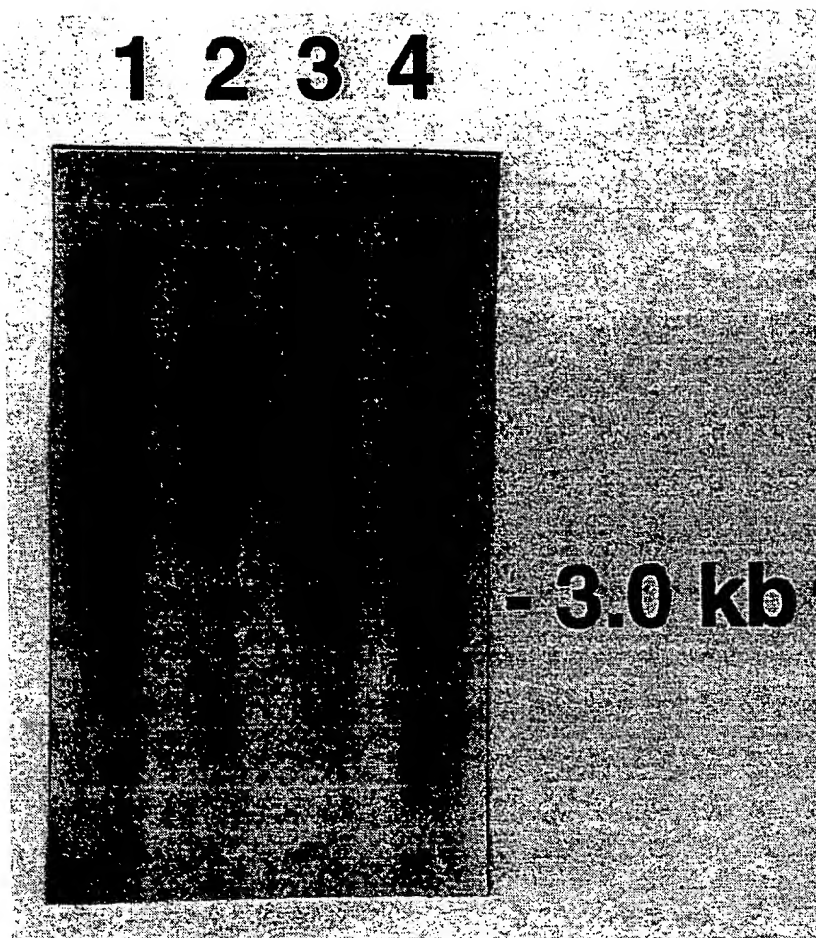
Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 17





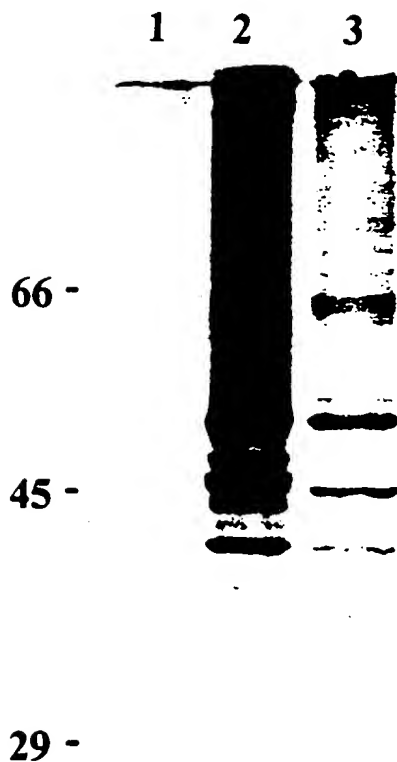
Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 18





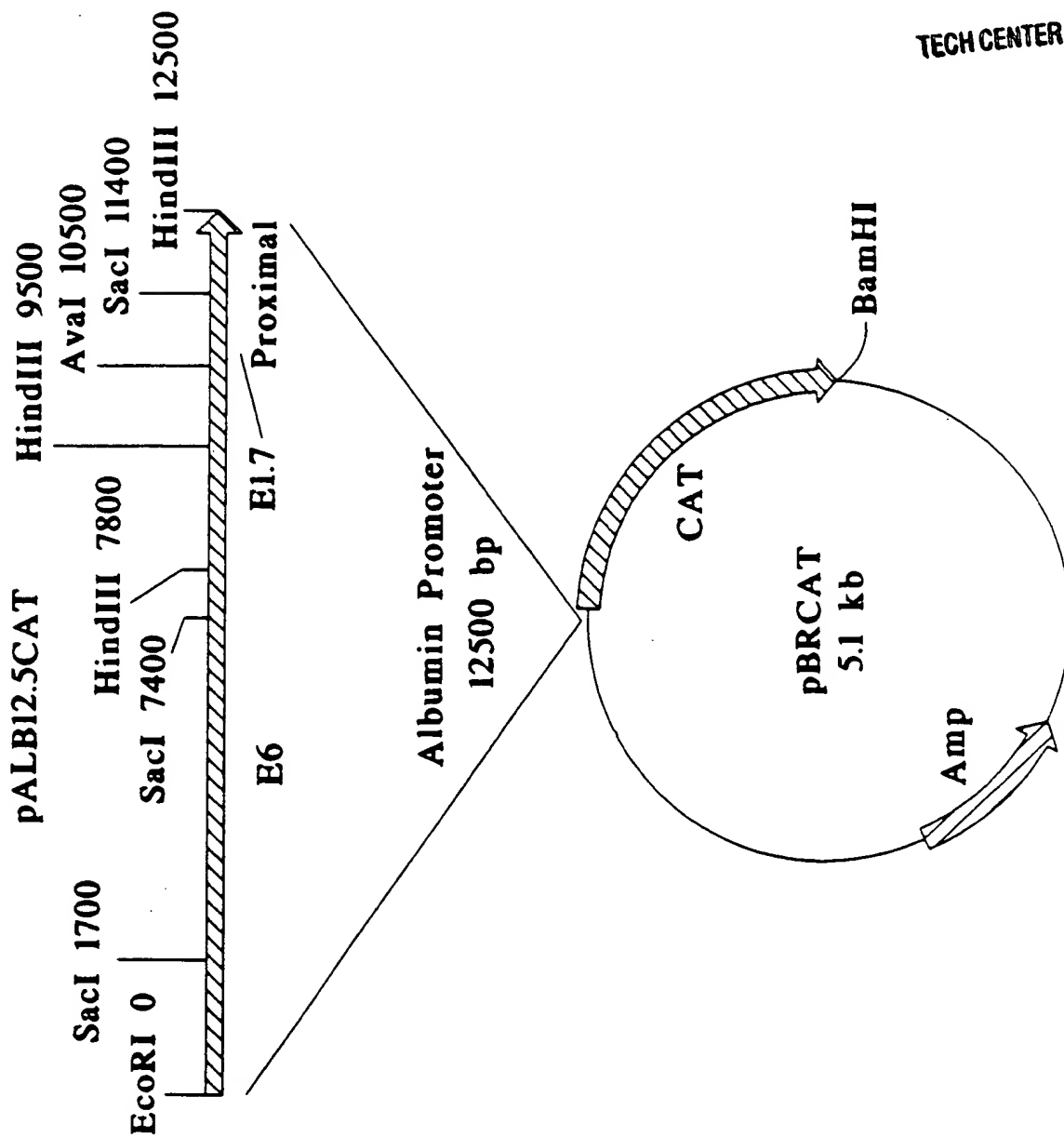
Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 19





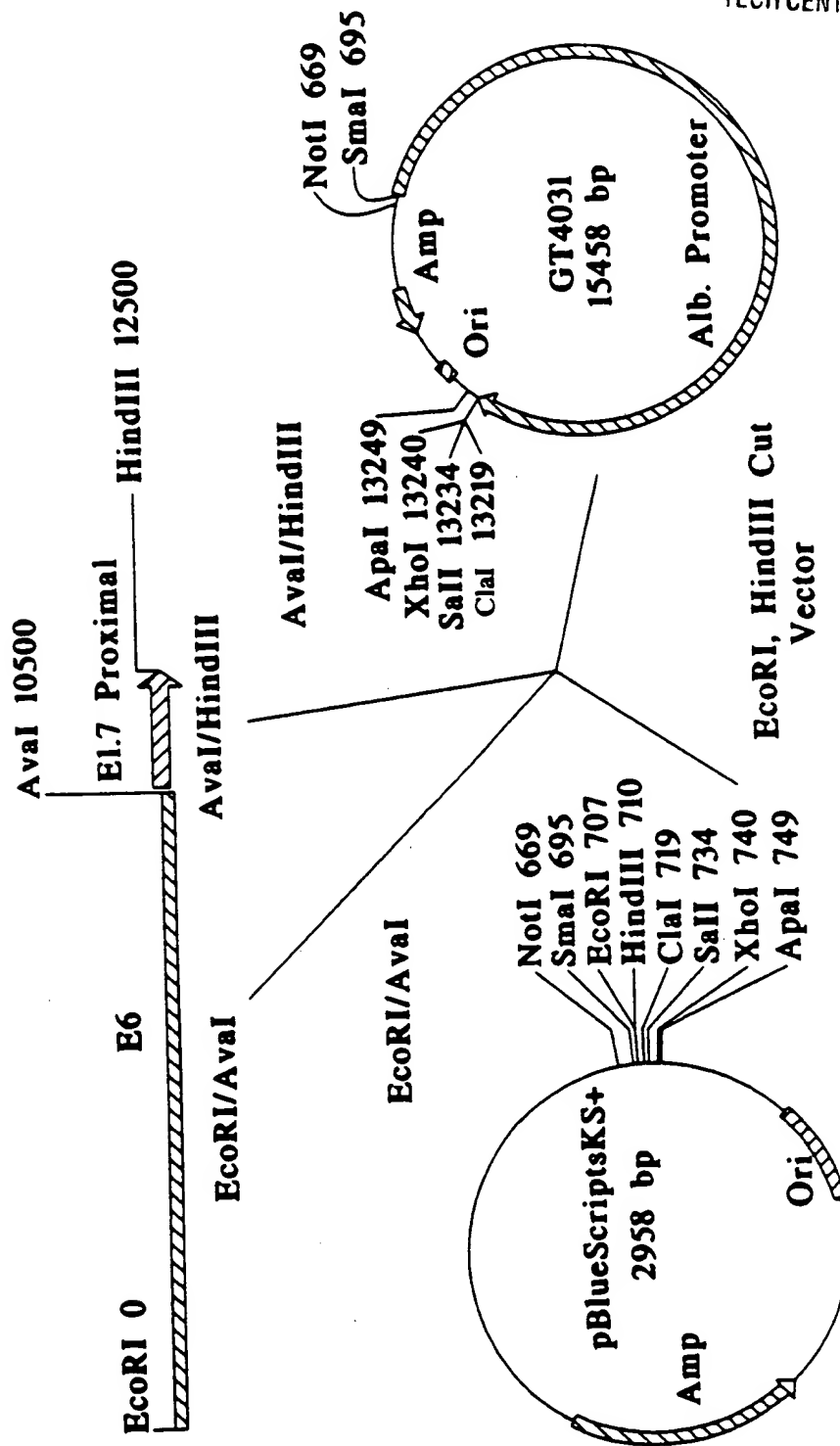
RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 20

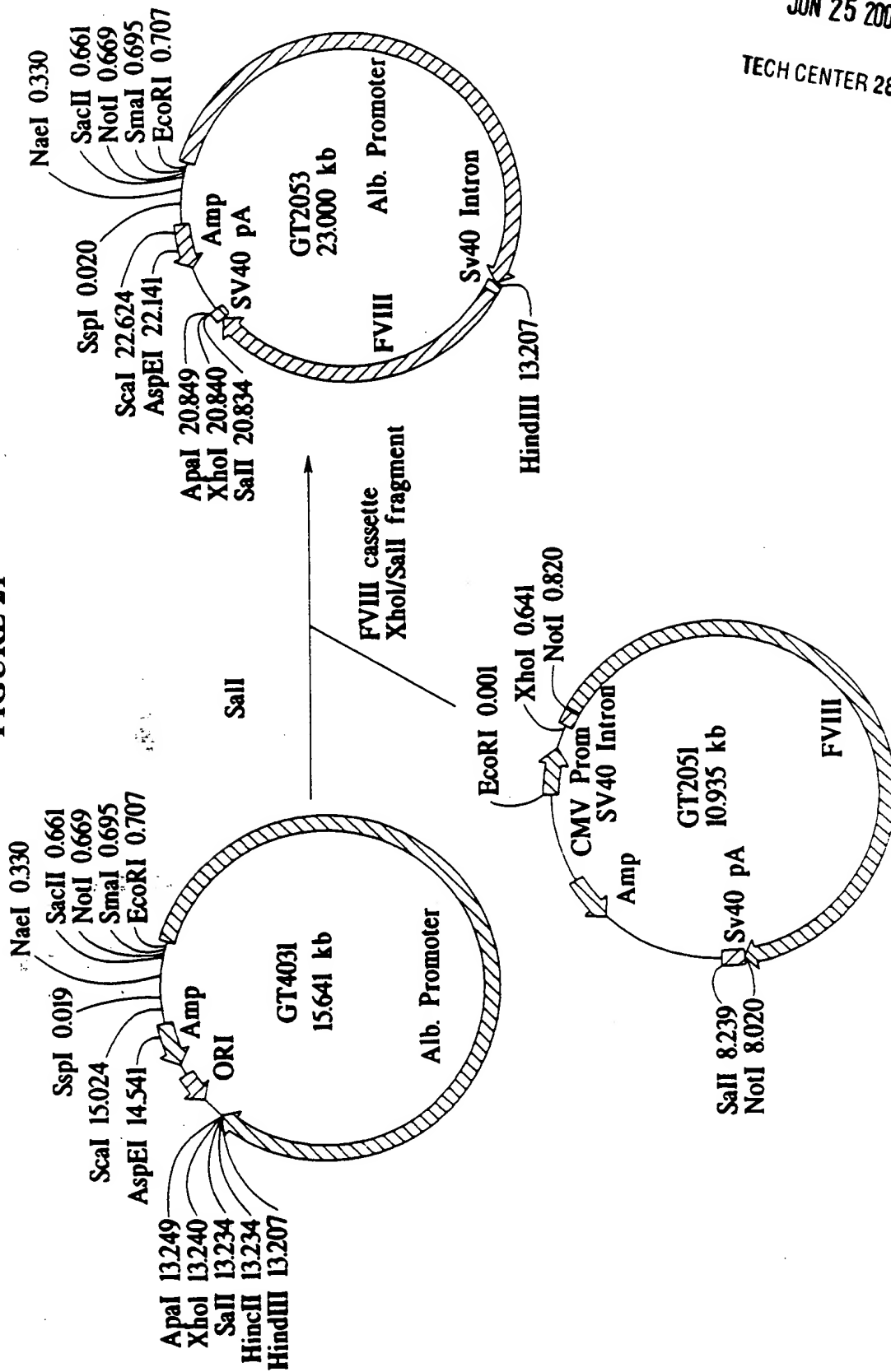
Albumin 12.5 kb Promoter Fragments





RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 21





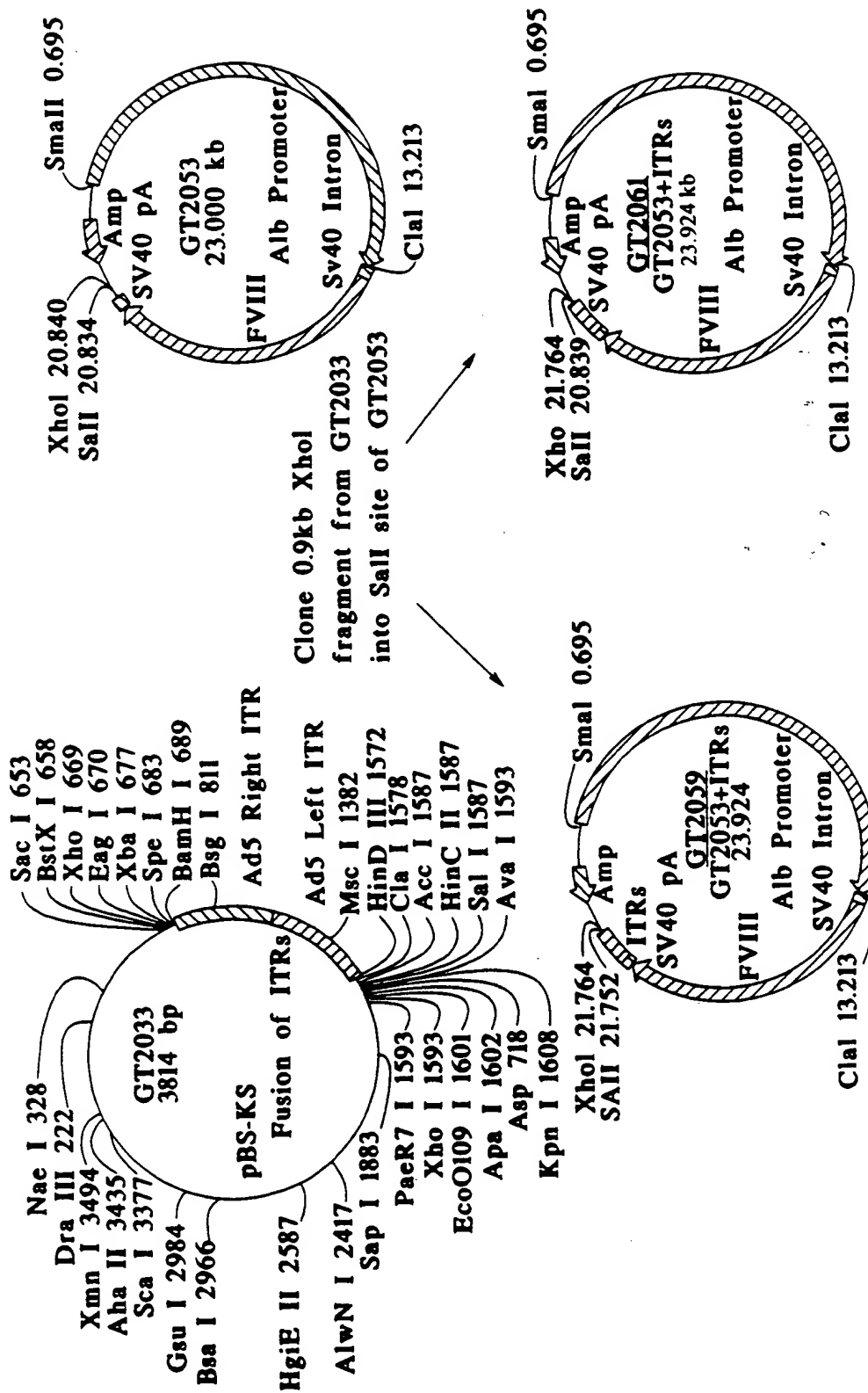
Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 22

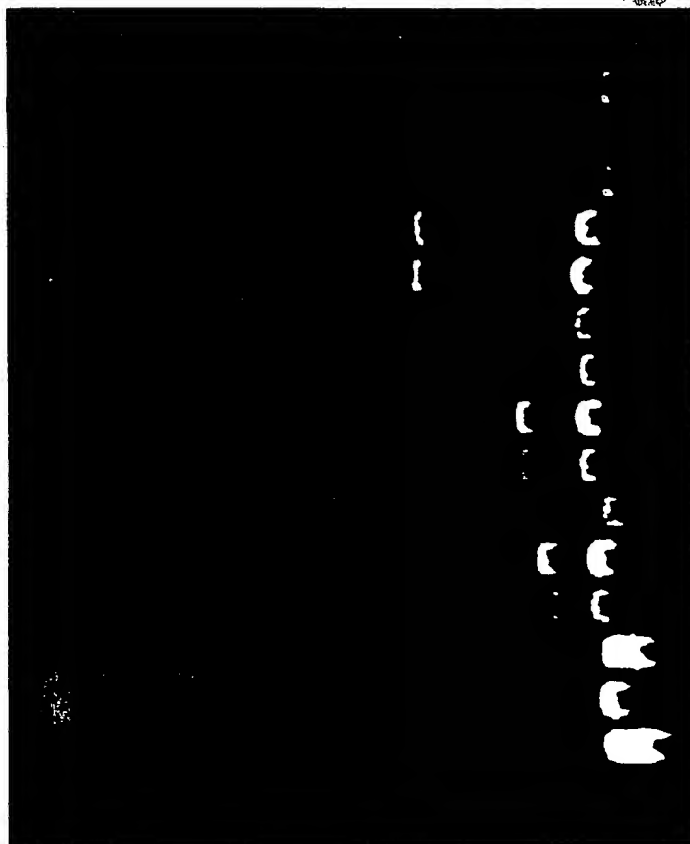




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 23



1 Kb DNA Marker

GT2053

GT2061

GT2059

GT2053 BamHI

GT2061 BamHI

GT2059 BamHI

GT2053 XbaI

GT2061 XbaI

GT2059 XbaI

GT2053 ClaI

GT2061 ClaI

GT2059 ClaI

GT2053 XhoI + Sall

GT2061 XhoI + Sall

GT2059 XhoI + Sall

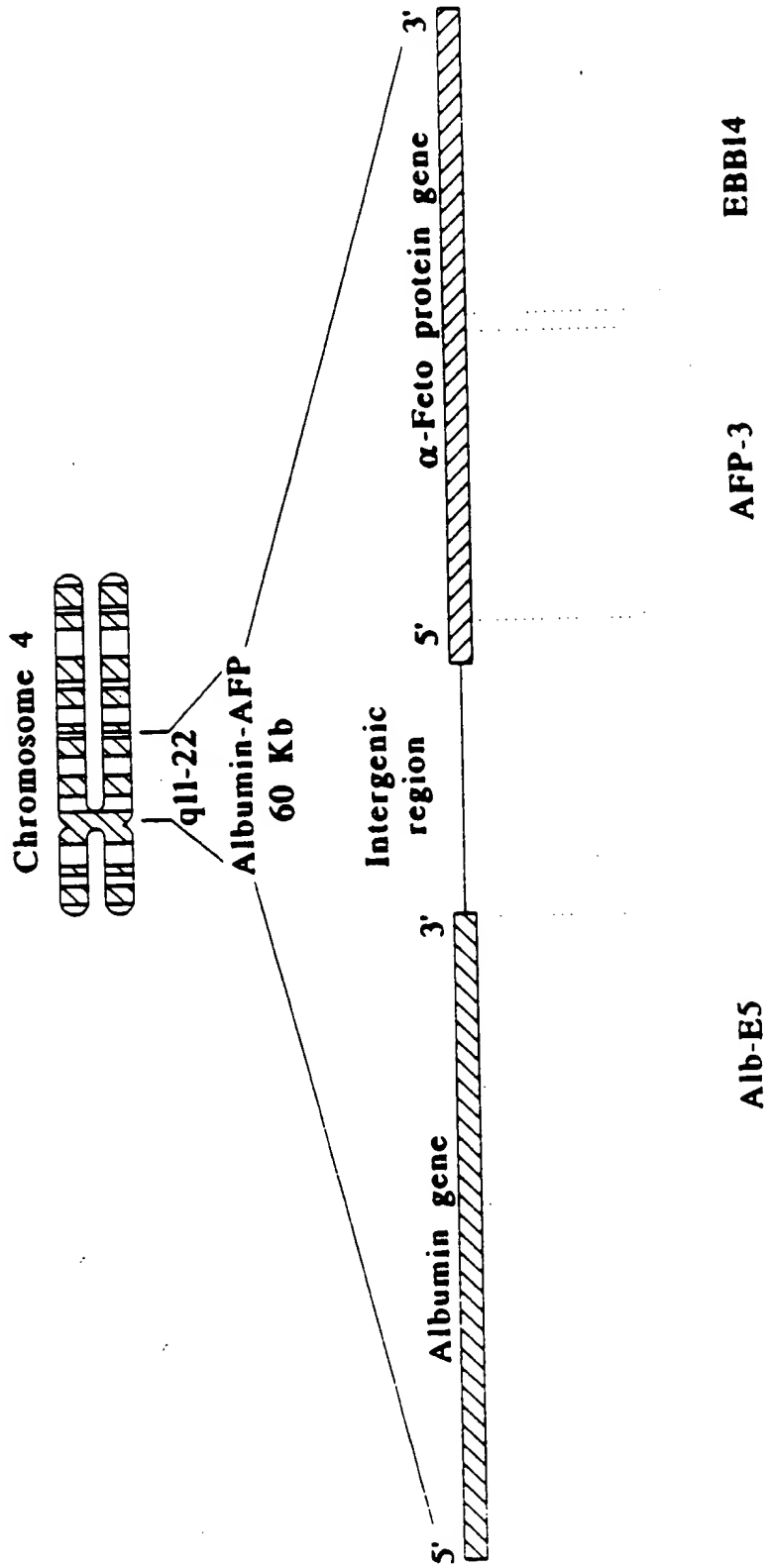
1Kb DNA marker



Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 24





RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 25

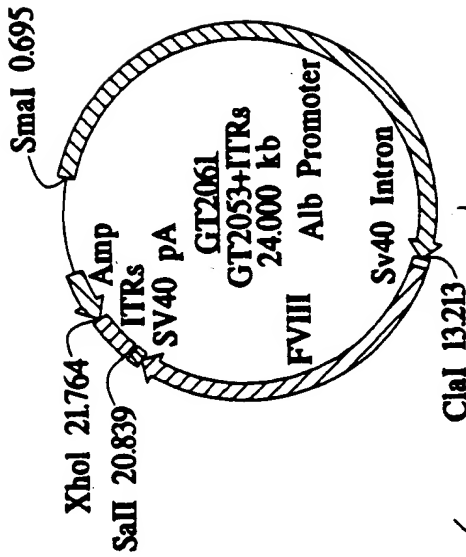


FIG. 25C

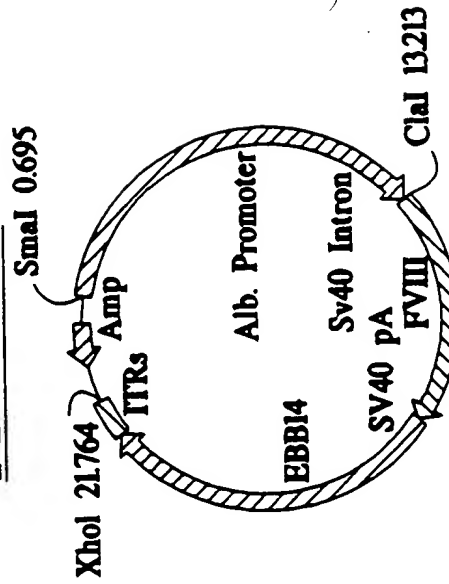


FIG. 25B

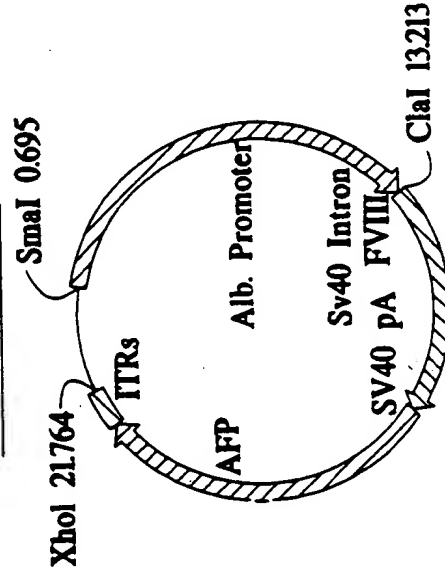
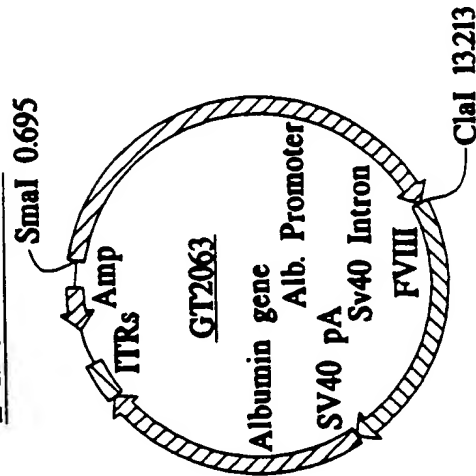


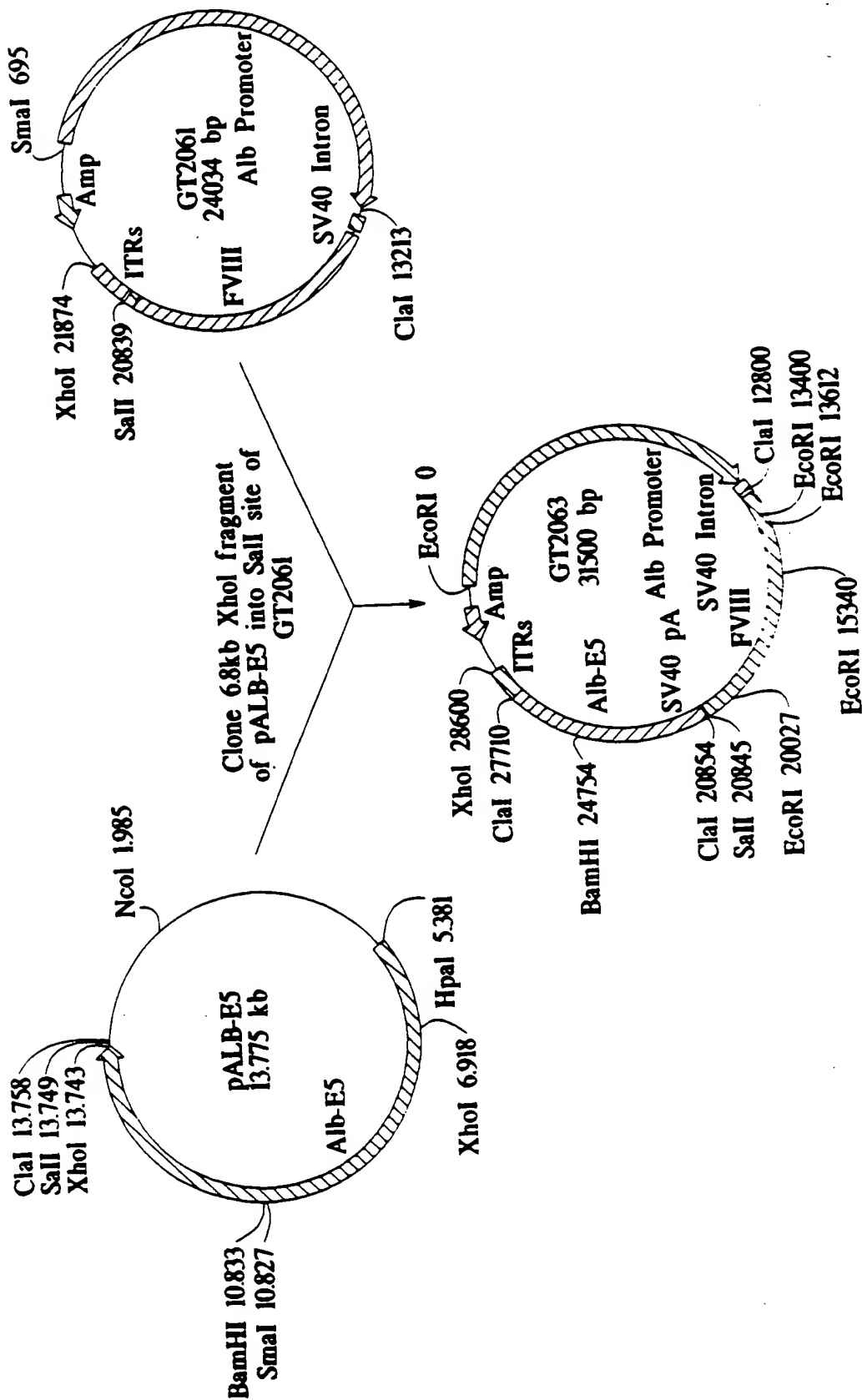
FIG. 25A





RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 26

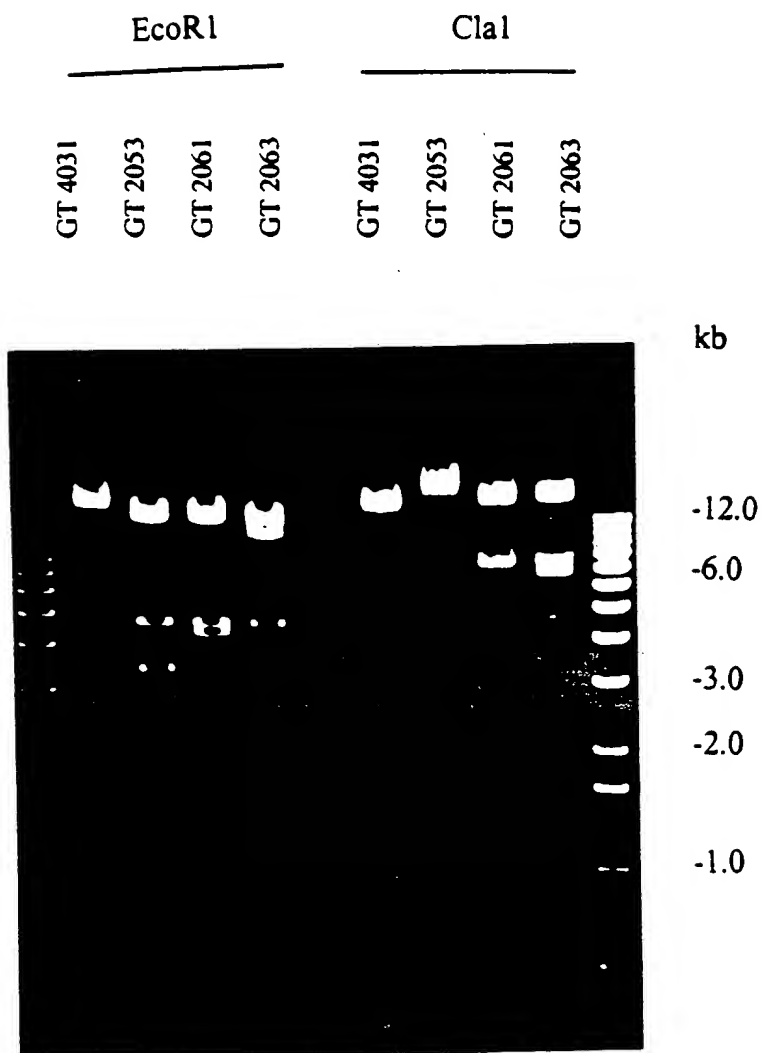




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 27





RECEIVED

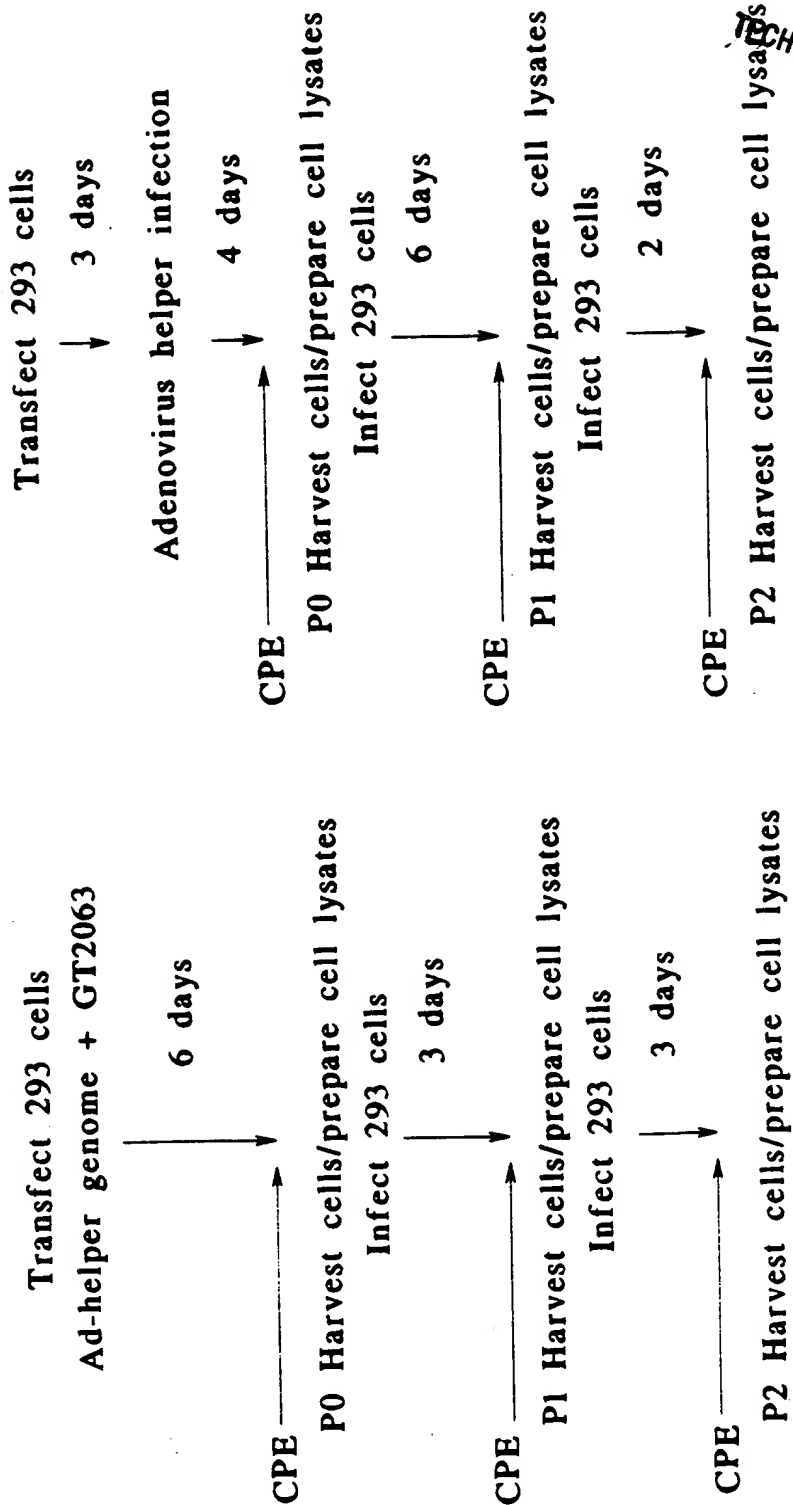
JUN 25 2004

TECH CENTER 2800

FIGURE 28

FIG. 28A

FIG. 28B





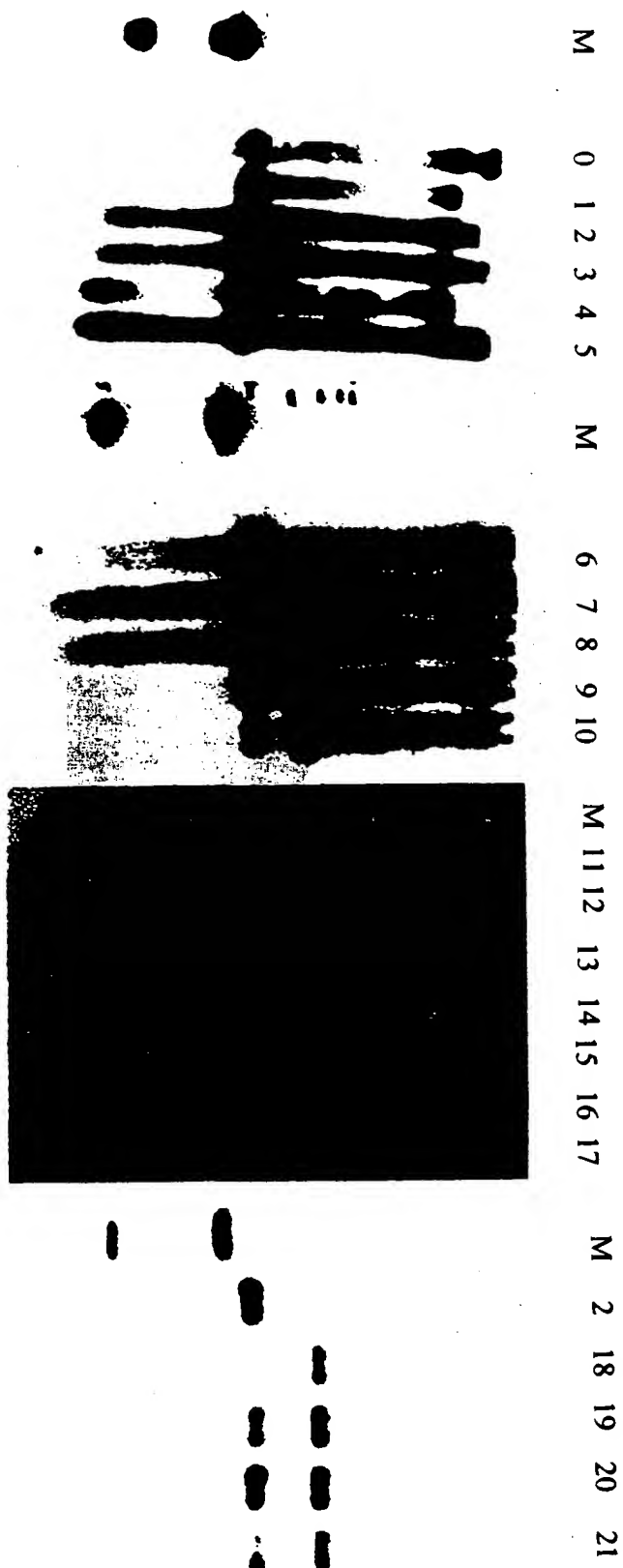
Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 30

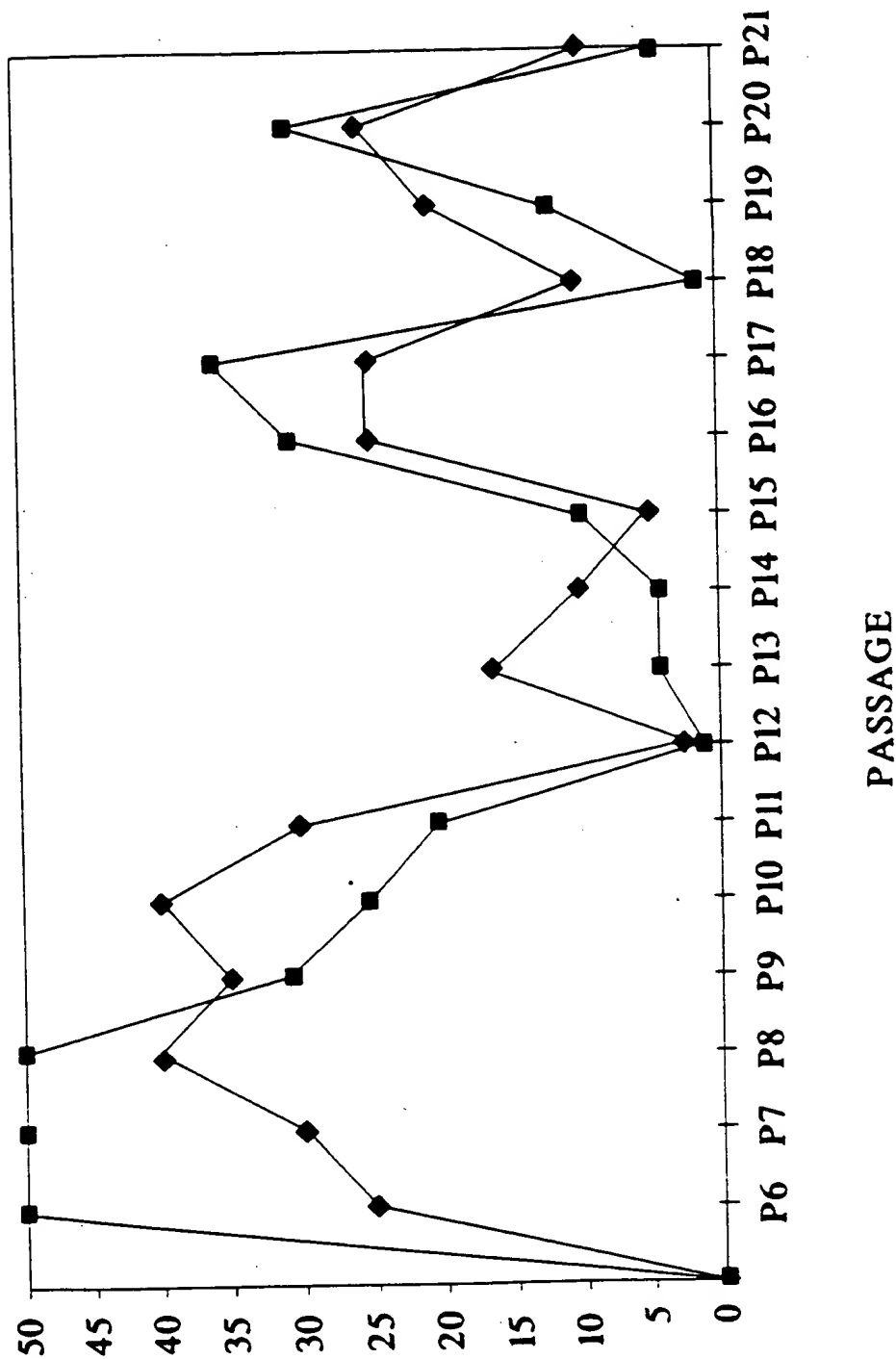




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2000

FIGURE 31





Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2000

mini-AdFVIII GT2063 passage 20 grown in 293 cells

Freeze/thaw cell pellet and
load over CsCl

A



2nd CsCl

B



C

M



FIGURE 32

← mini-AdFVIII

← AdH β



RECEIVED

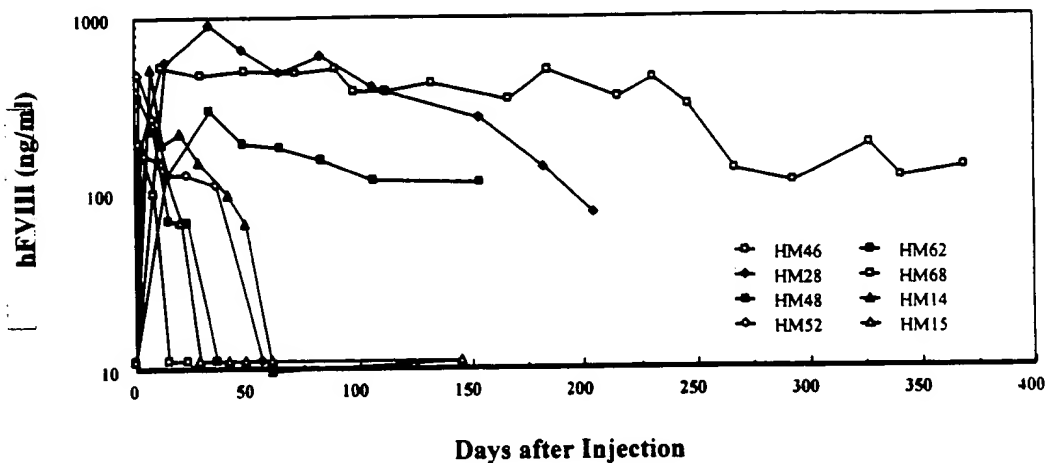
JUN 25 2004

TECH CENTER 2800

FIGURE 33
MiniAdFVIII-Mediated Expression of hFVIII in Mice

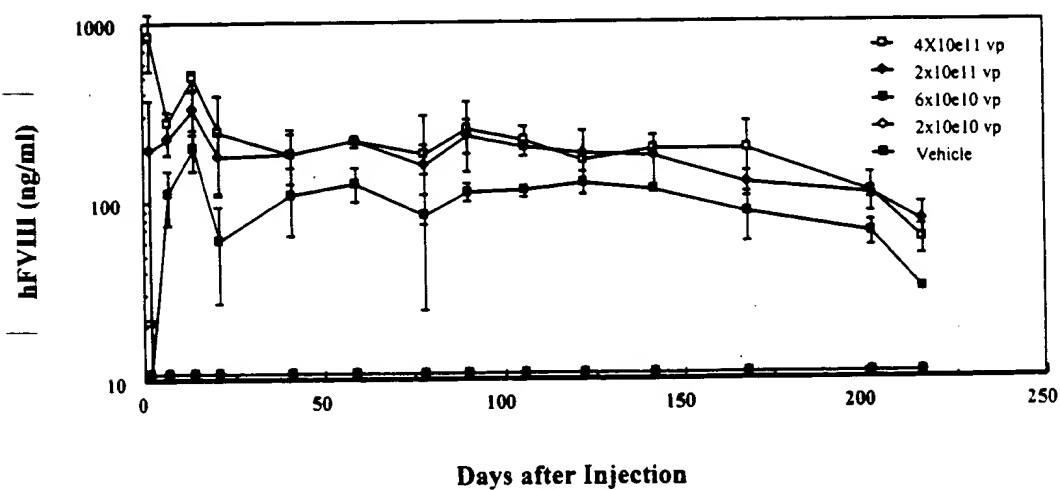
A

Hemophilic Mice



B

C57BL/6 Mice





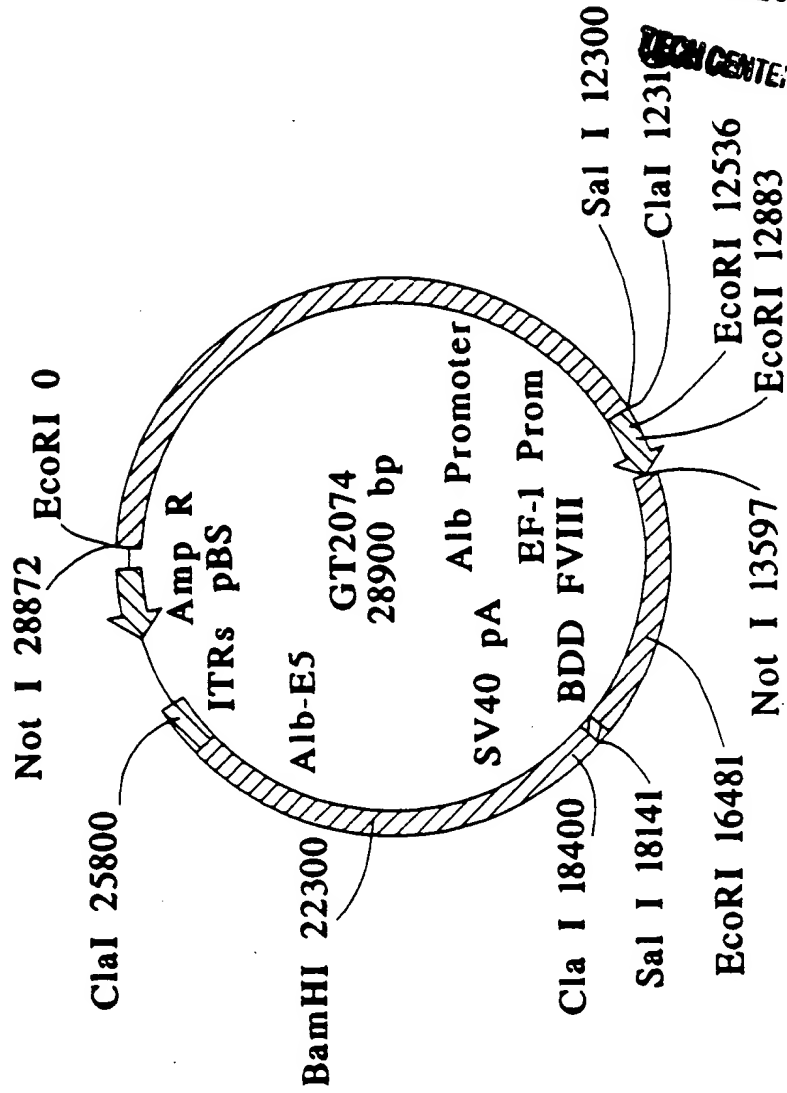
Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 34

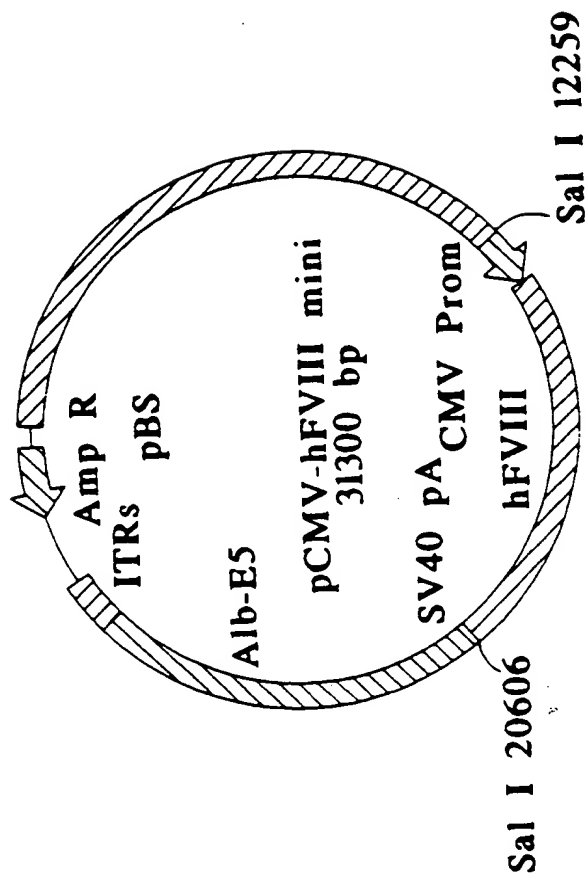




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH. CENTER 2000

FIGURE 35





RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 36A

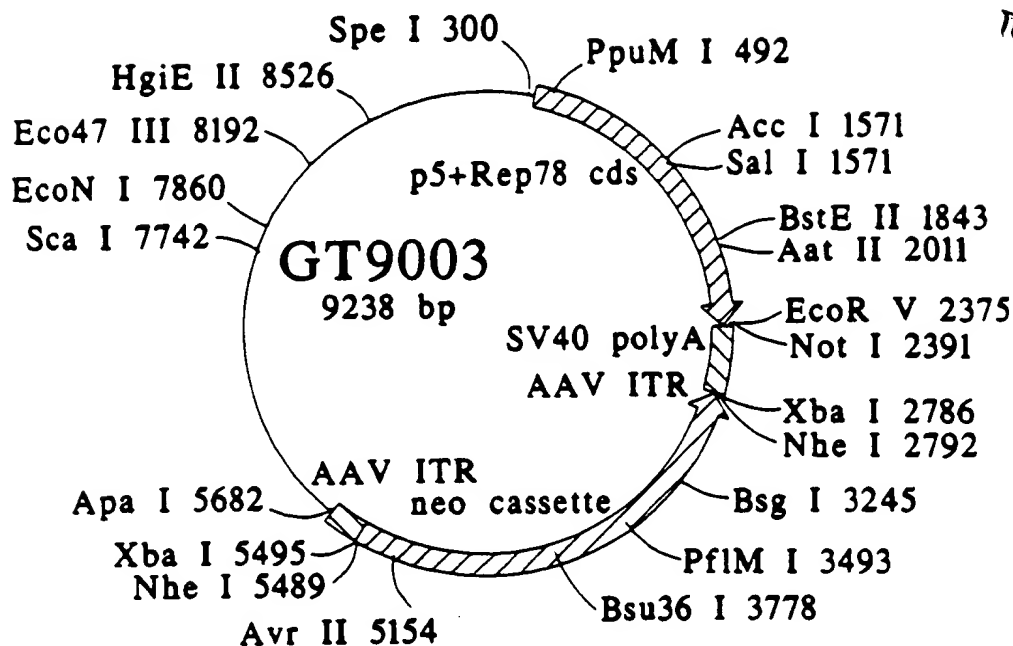
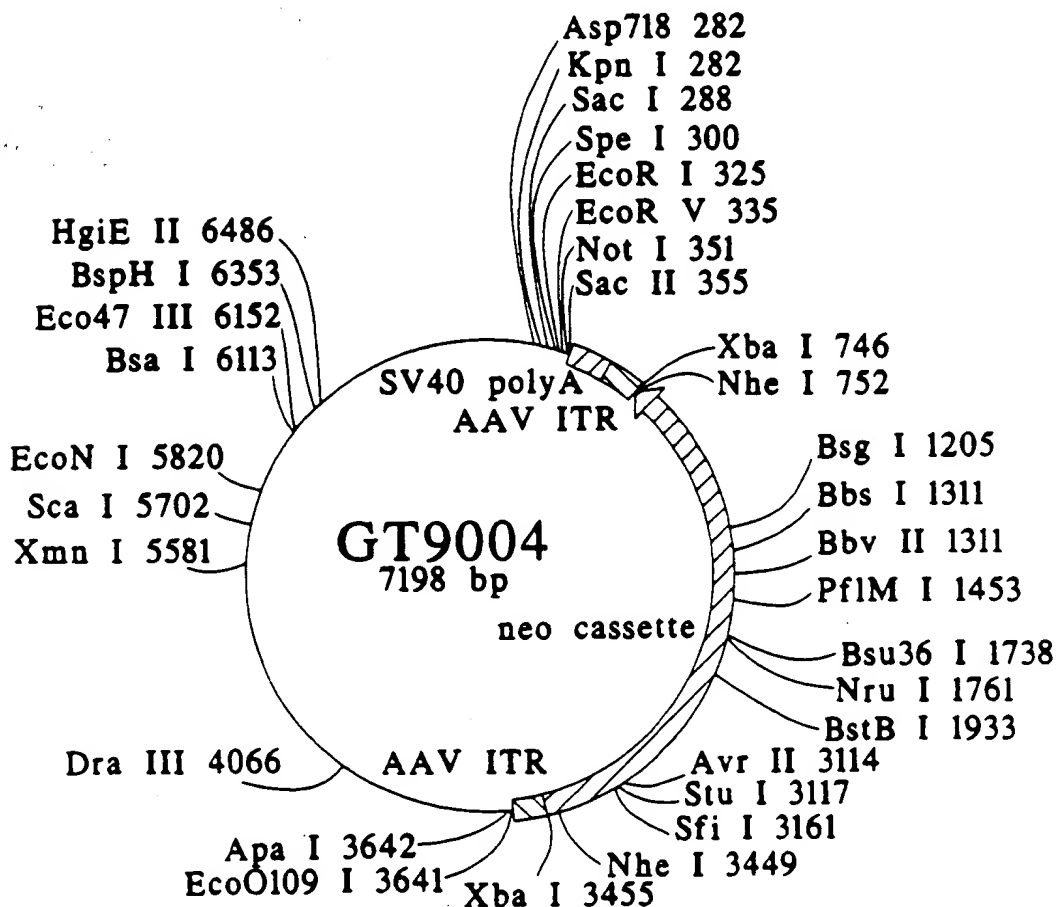


FIGURE 36B





Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 36C

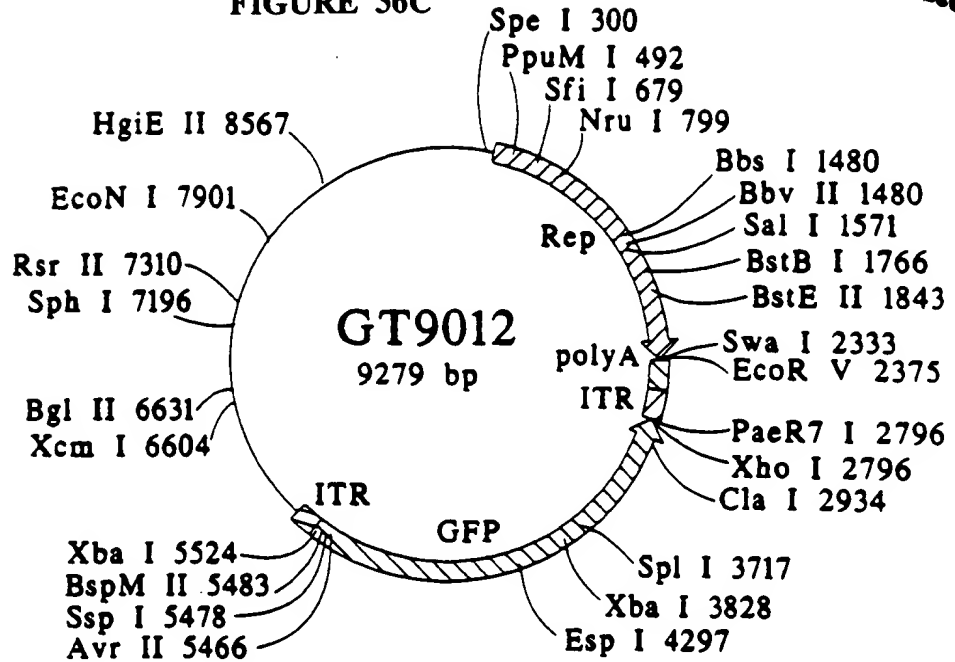
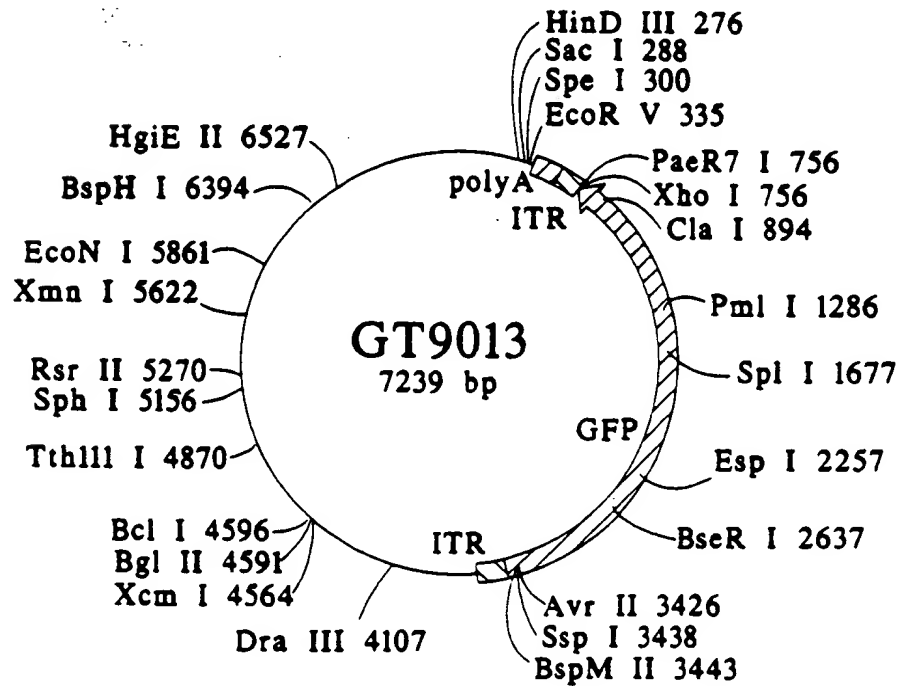


FIGURE 36D

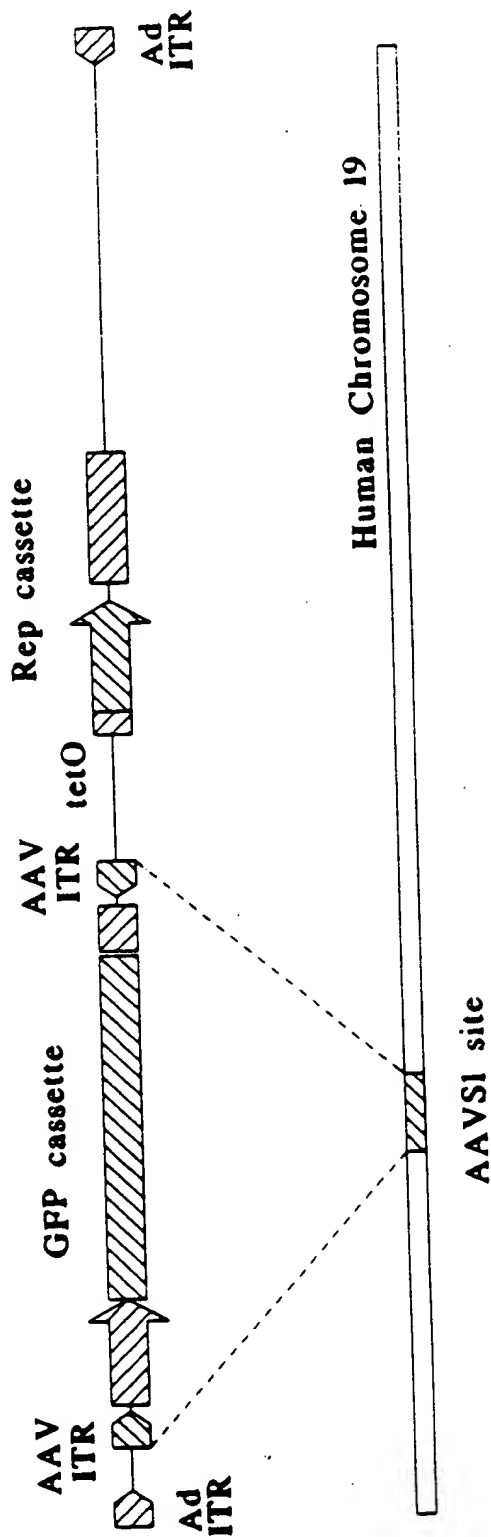




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2000

FIGURE 37

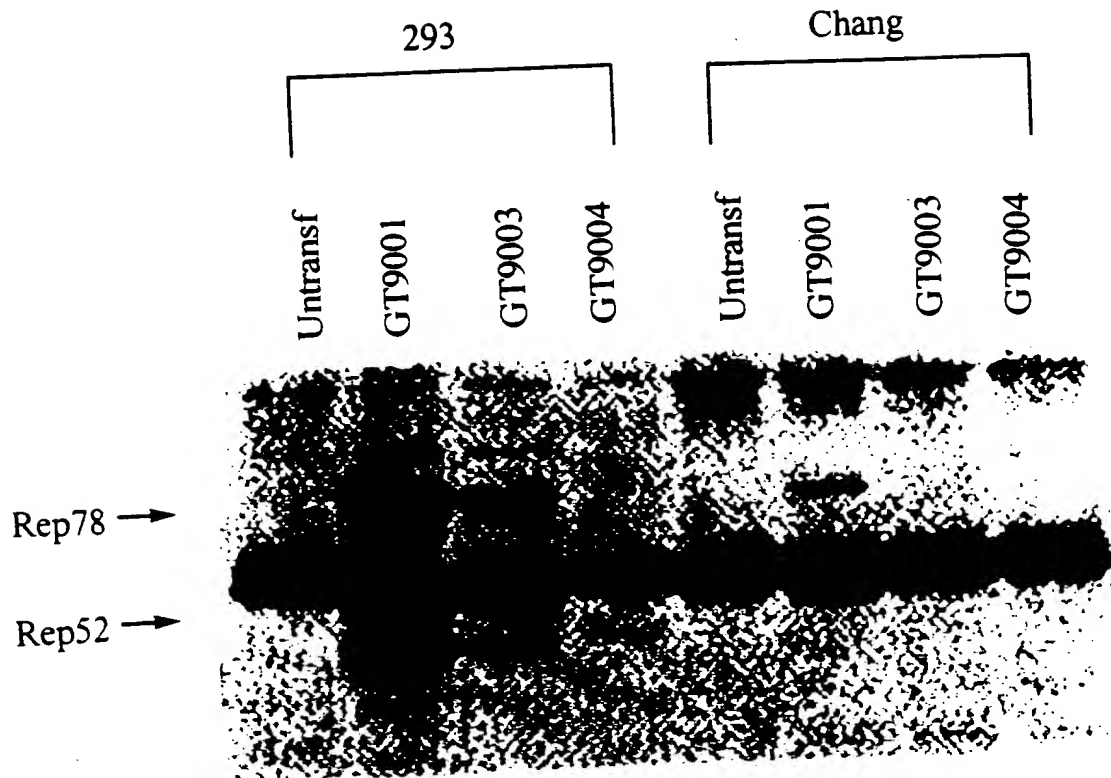




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2000

FIGURE 38

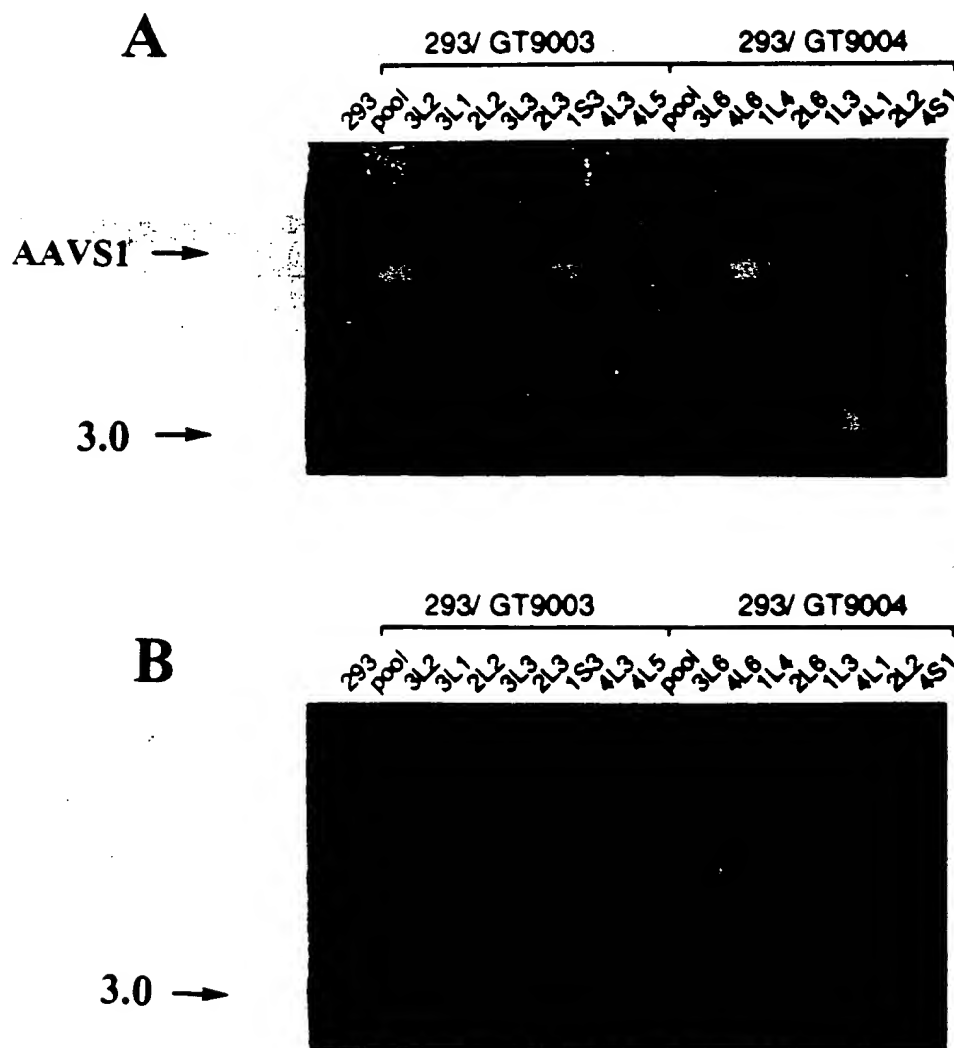




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 39

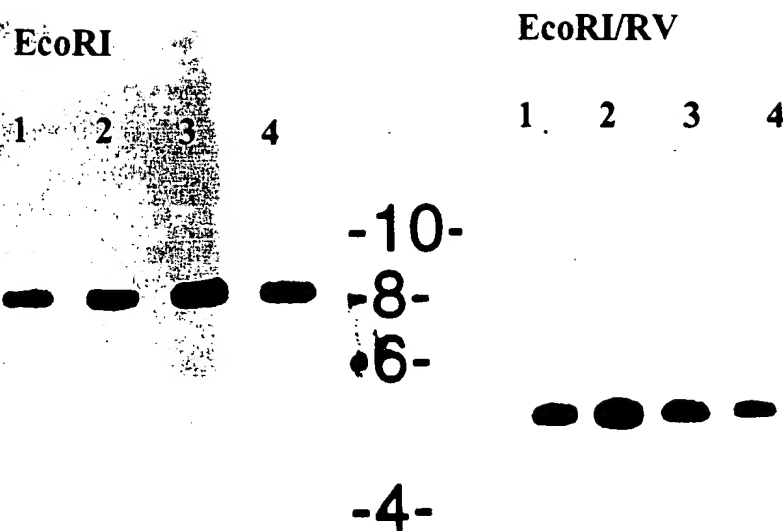




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 41

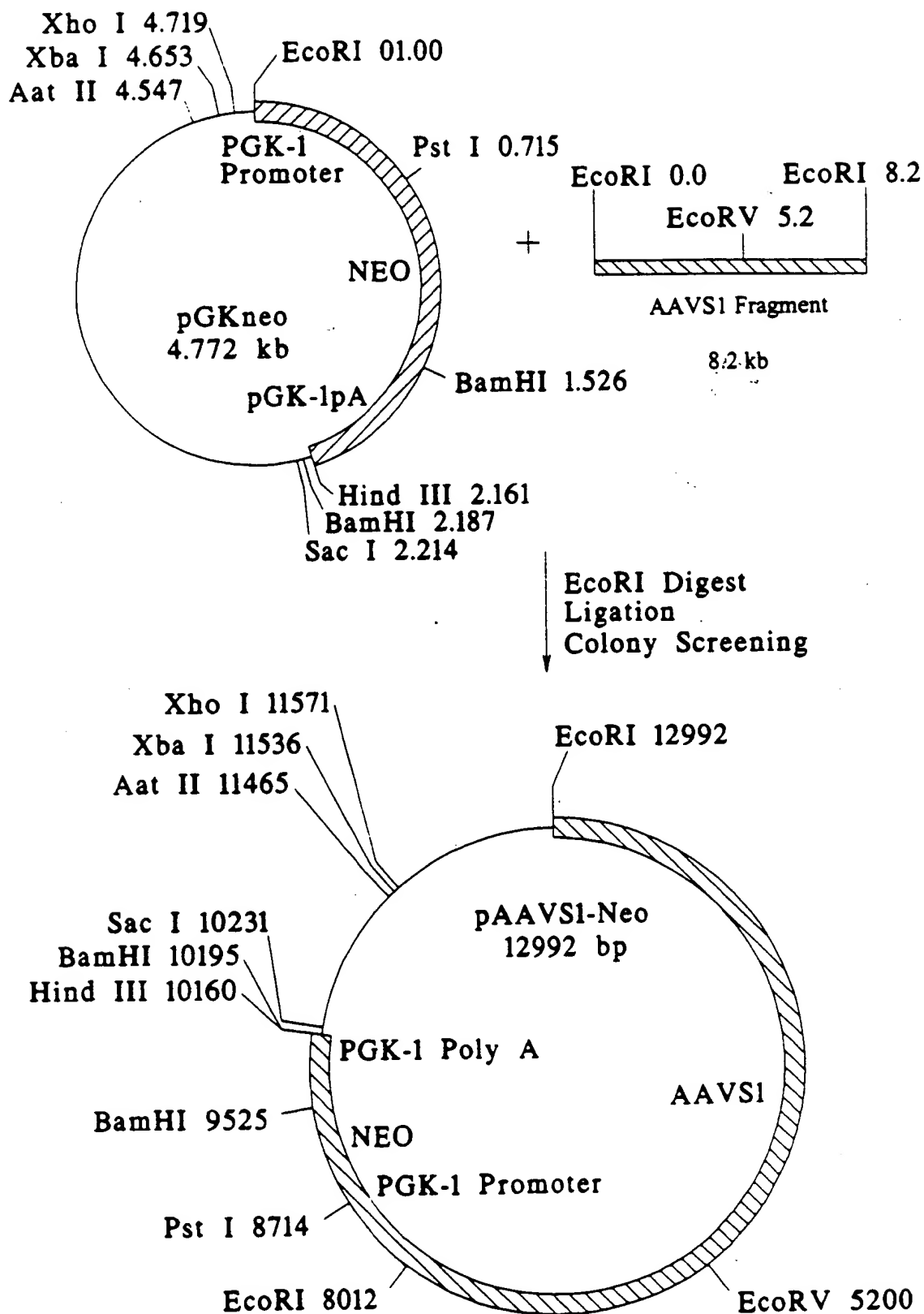




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 42

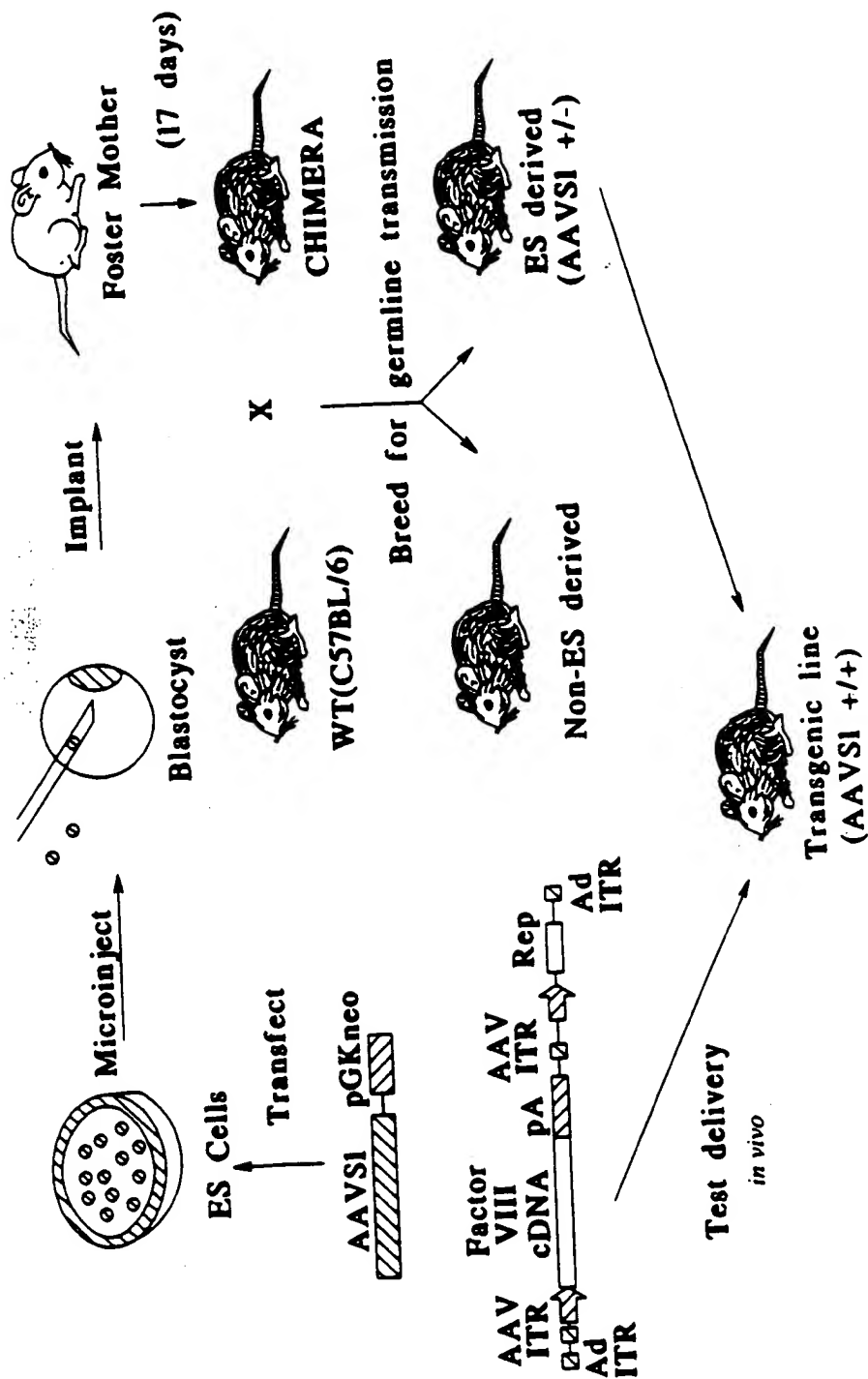




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 43

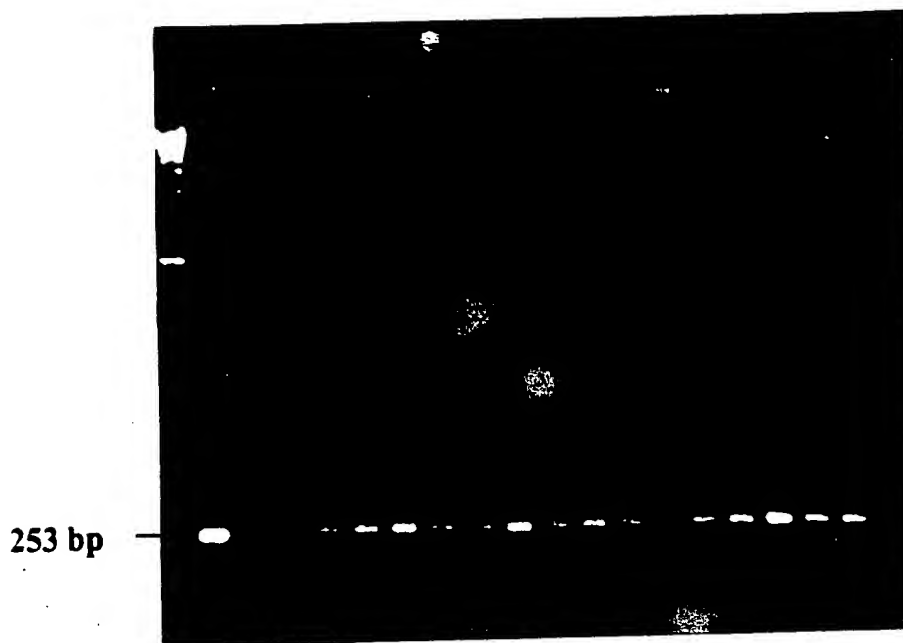




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2003

FIGURE 44





Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2800

FIGURE 45

4 3.16 B7

5.2 kb →

3.0 kb →

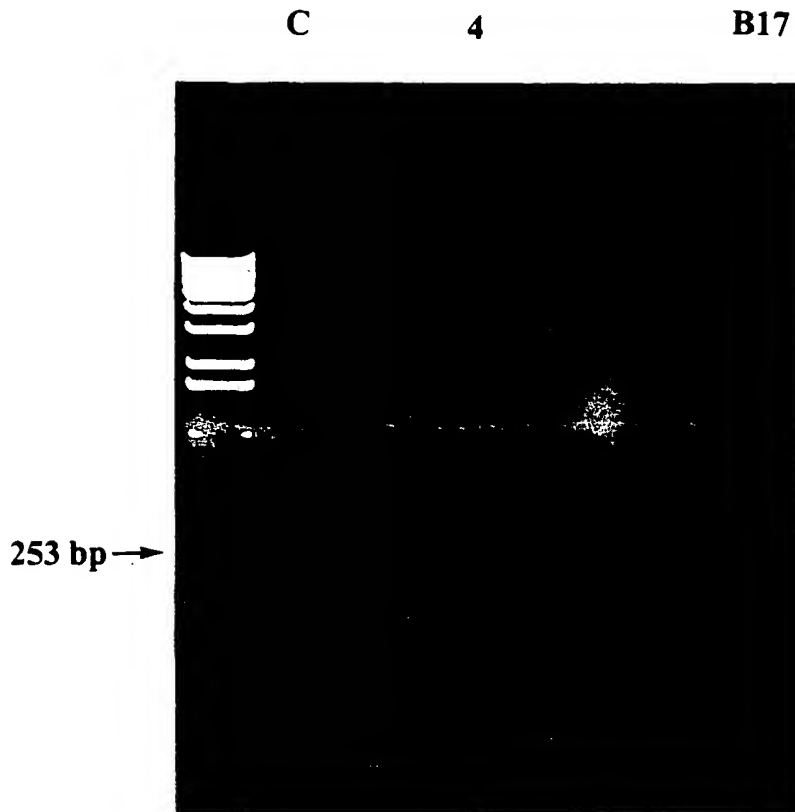




Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED
JUN 25 2004
TECH CENTER 2600

FIGURE 46

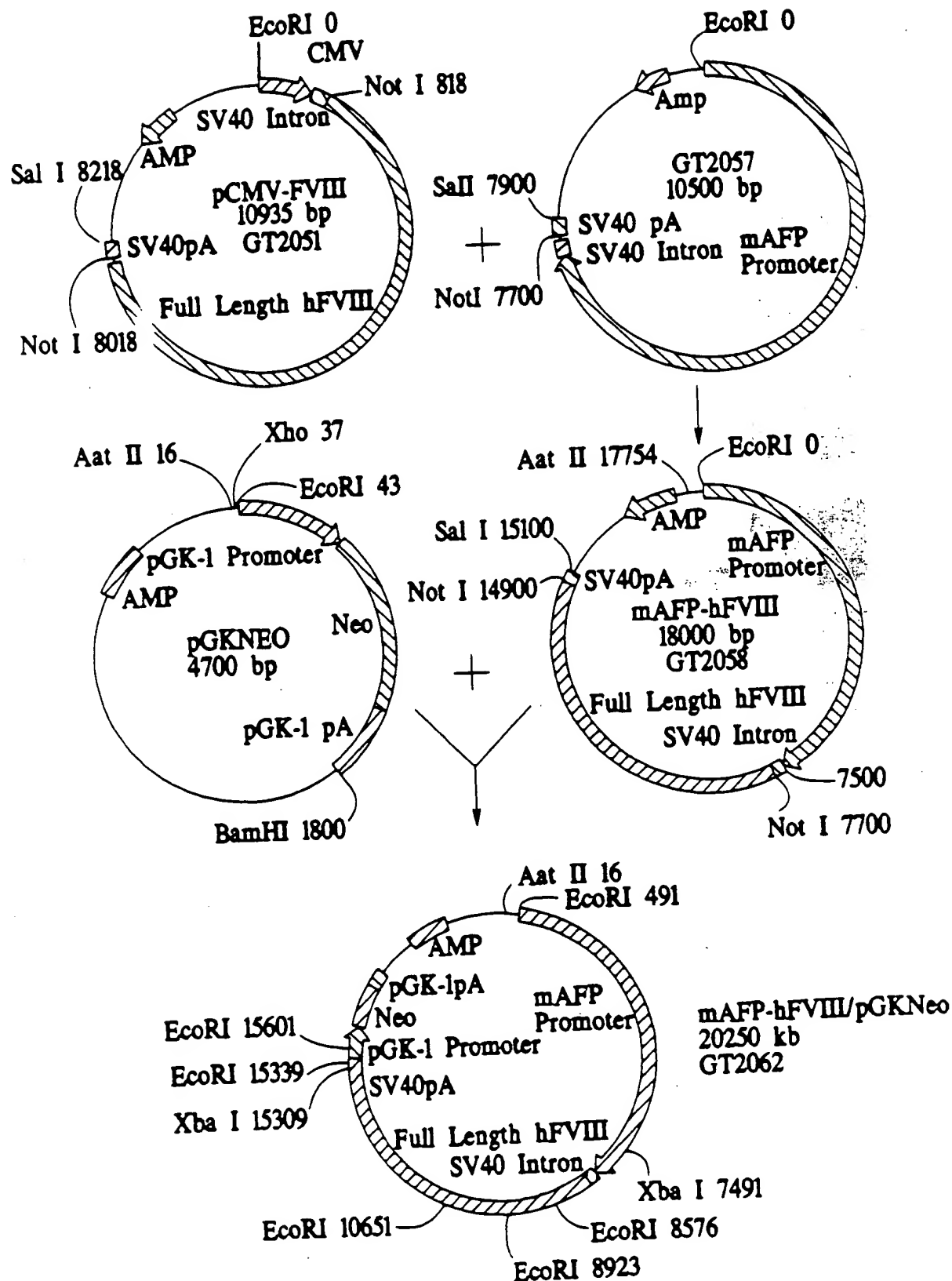




JUN 25 2004

TECH CENTER 2300

FIGURE 47





Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

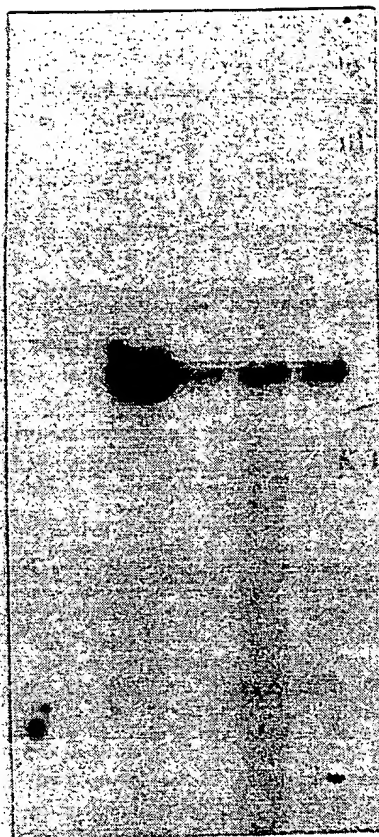
JUN 25 2004

TECH CENTER 2800

FIGURE 48

ES 19 22 23 33

7.8 kb -



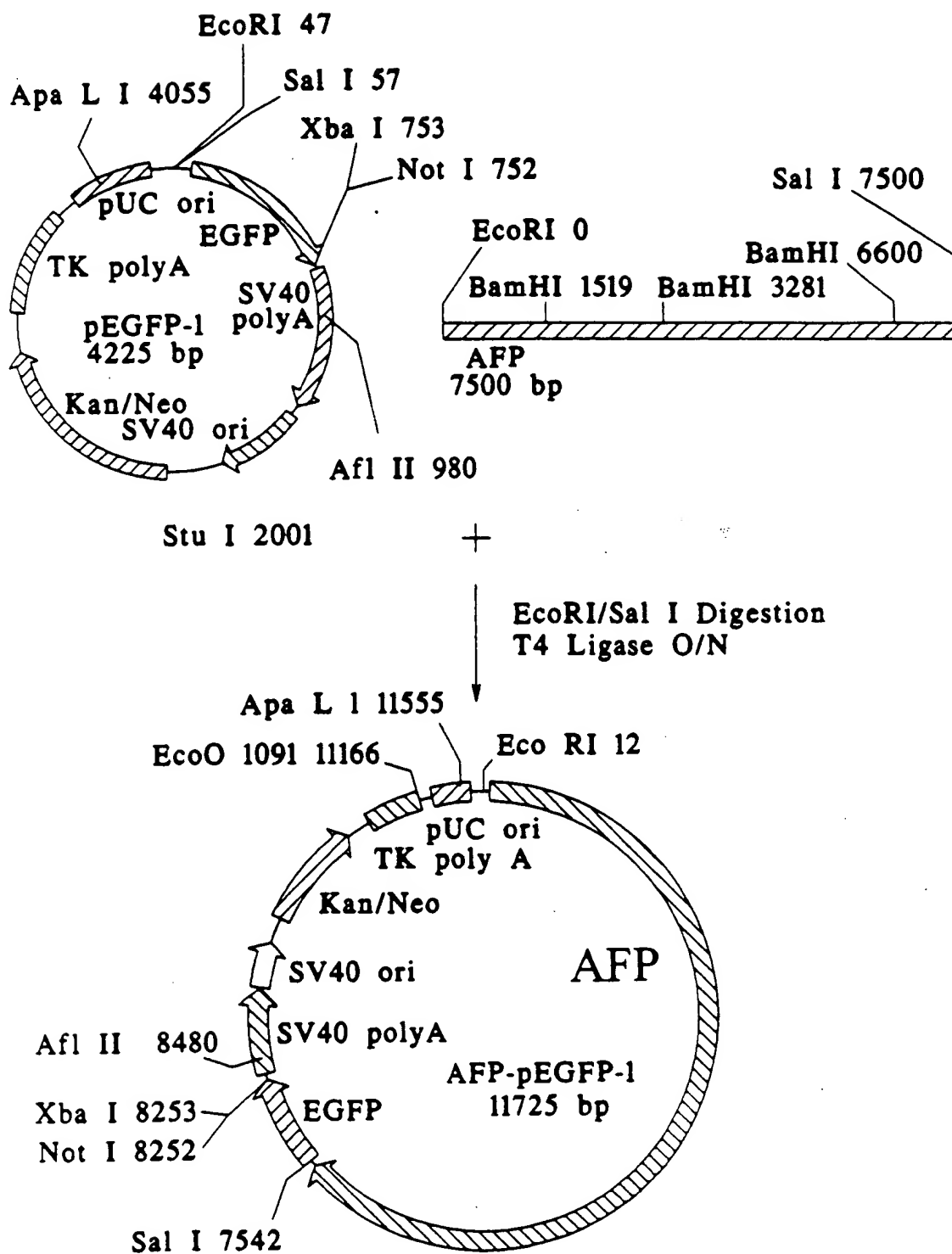


RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 49



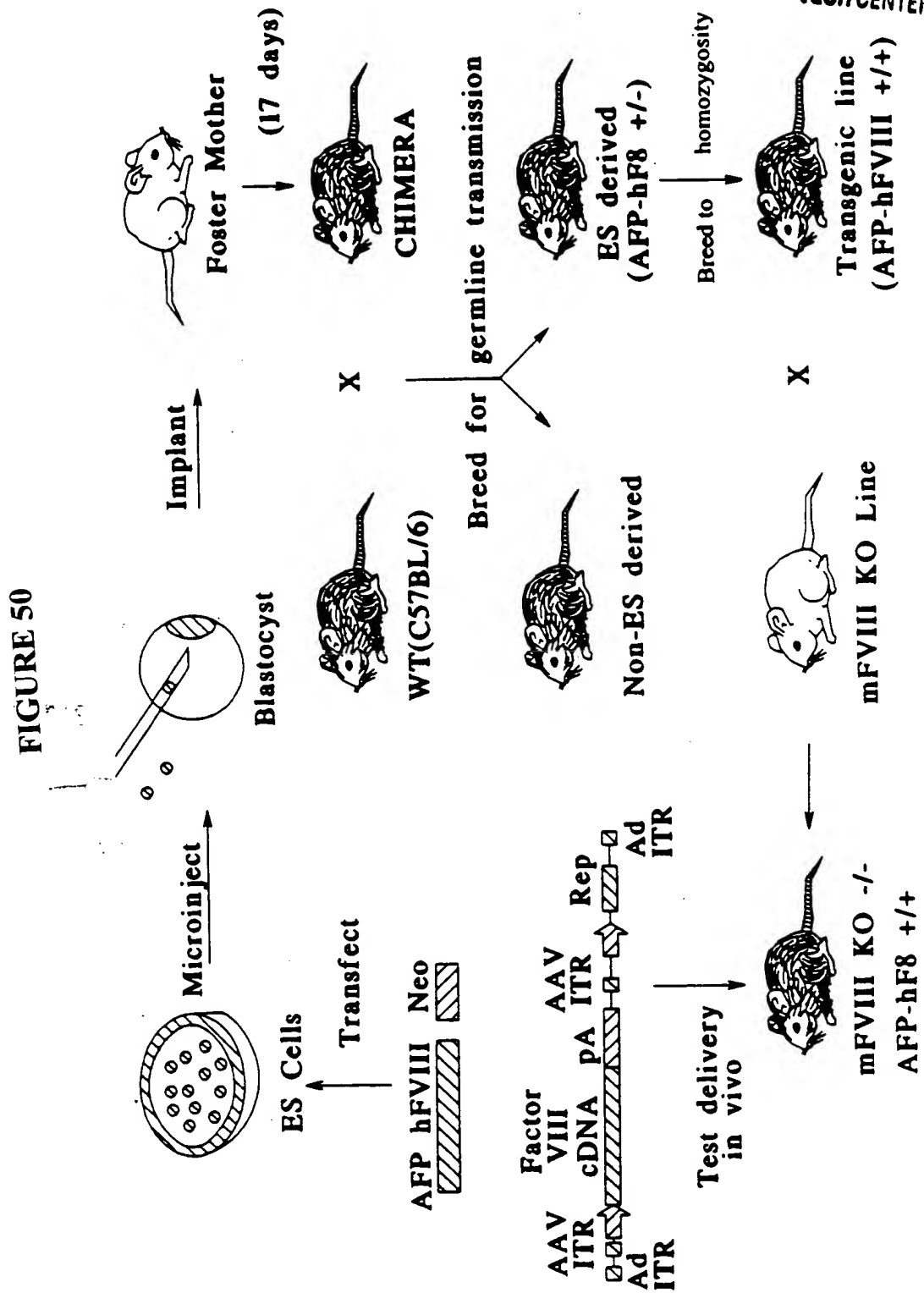


Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2800





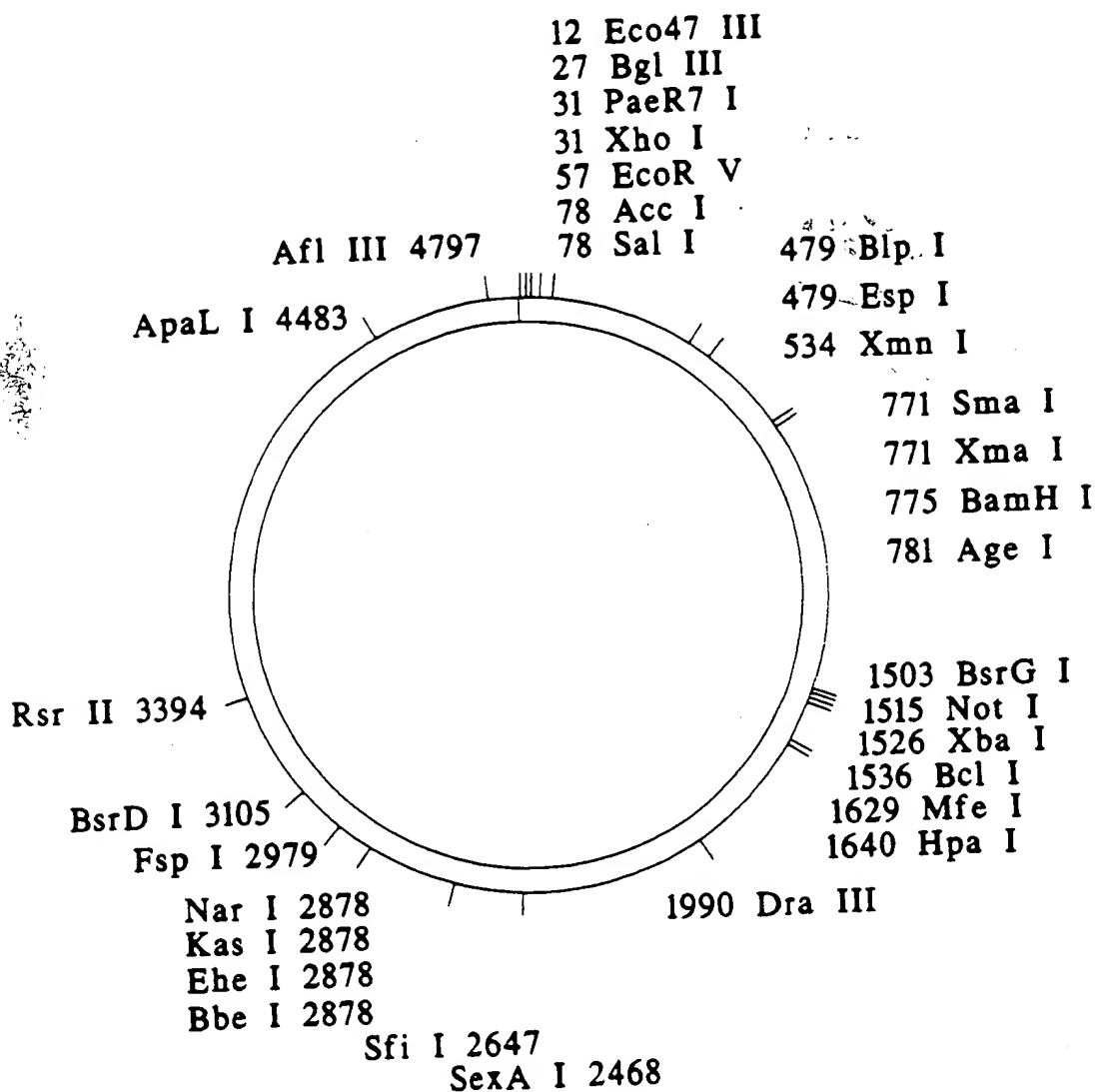
Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2000

FIGURE 51





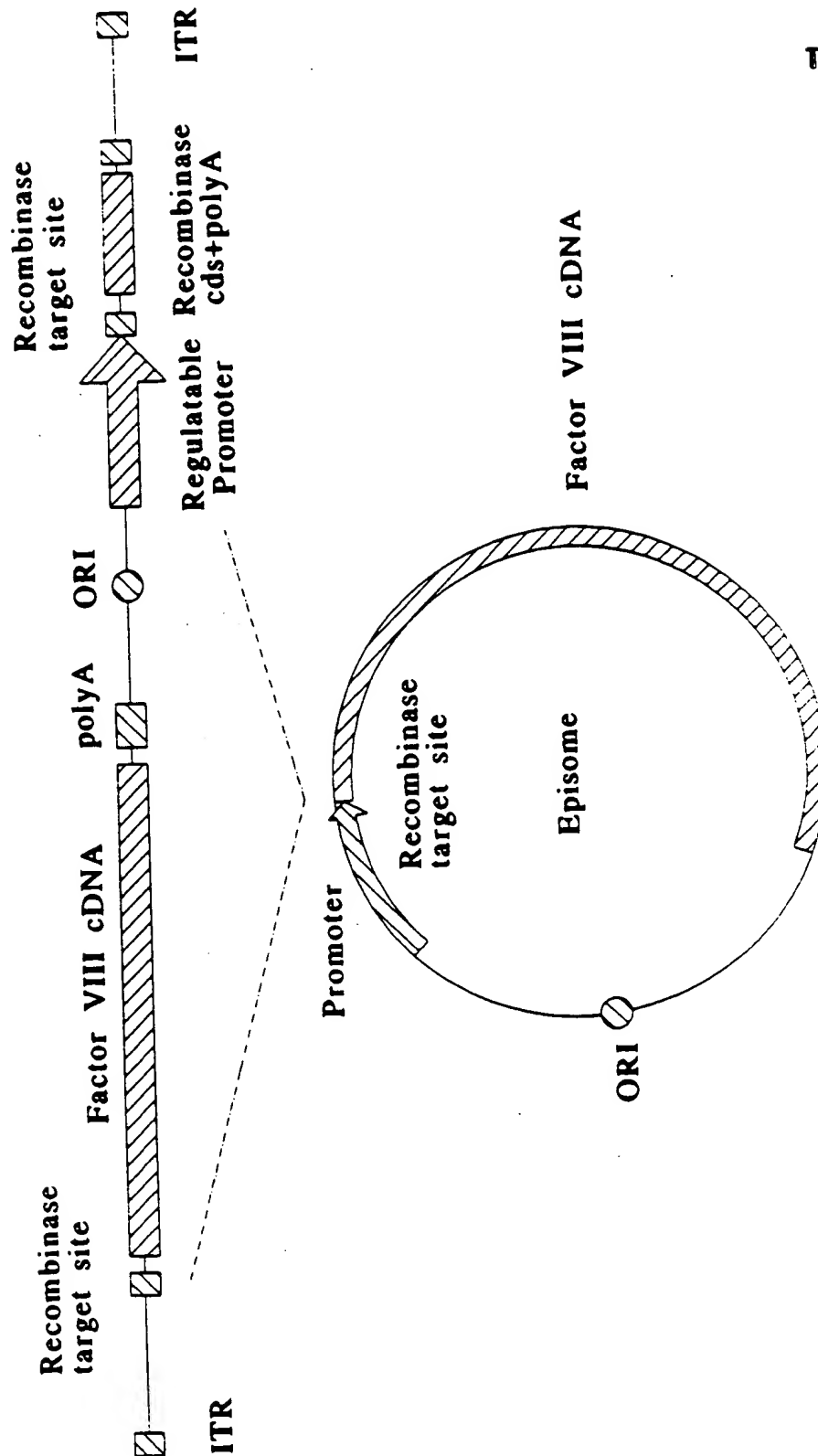
Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 52



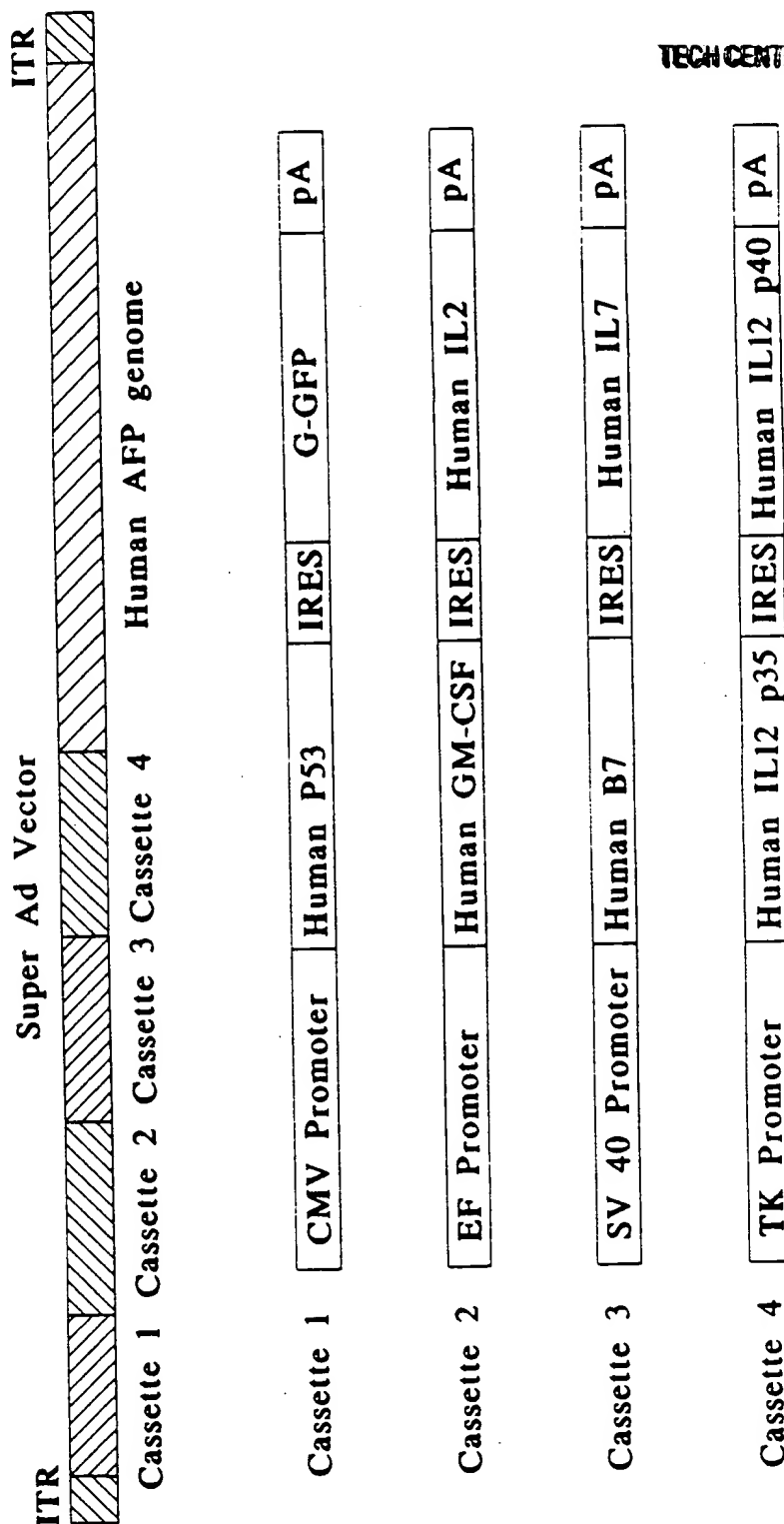


RECEIVED

JUN 25 2004

TECH CENTER 2000

FIGURE 53





Inventors: Zhang et al.
Title: Mini-Ad Vector for Immunization
Application No.: 09/837079

RECEIVED

JUN 25 2004

TECH CENTER 2800

FIGURE 54

